

POLSKA AKADEMIA UMIEJĘTNOŚCI  
INSTYTUT EKONOMICZNY

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# STUDIA EKONOMICZNE

## ECONOMIC STUDIES

V

KRAKÓW 1938

NAKŁADEM POLSKIEJ AKADEMII UMIEJĘTNOŚCI  
SKŁAD GŁÓWNY W KSIĘGARNIACH GEBETHNERA I WOLFFA  
WARSZAWA — KRAKÓW — ŁÓDŹ — POZNAŃ — WILNO — ZAKOPANE

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REDAKCJA (EDITORS): PROF. DR ADAM HEYDEL  
DR WŁODZIMIERZ HAGEMEJER

ADRES:

POLSKA AKADEMIA UMIEJĘTNOŚCI, KRAKÓW, UL. SŁAWKOWSKA 17

Cena zeszytu (Price per Issue): 3 złote.

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JAN KOSTANECKI

THE CREATION OF DEPOSITS BY  
THE BANKING SYSTEM<sup>1</sup>

I

The subject to be discussed in the present paper seems to be a favourite topic of debate in contemporary English and American writings on banking and monetary matters, and there is hardly a textbook on money and banking which does not attempt to give an answer to the question whether banks can create deposits.

The external facts of the situation are not on the whole a subject of disagreement: it is pretty generally conceded that any growth of the amount of credit granted by the banking system increases the volume of means of payment in the hands of the public and ultimately returns to the banking system in the form of additional deposits. Even if certain reservations are made for more primitive stages of economic development, the above statement is considered to hold good for any developed system, in which payments are made partly in legal tender, money, but in the majority of cases through transfer by check or book-entry of claims to payment of legal tender on the part of banks, and in which the habits of payment

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<sup>1</sup> The author of this paper, the late Dr. Jan Kostanecki reader at the Jagellonian University lost his life in an aeroplane disaster on the way from Cracow to Warsaw on the 11-th of November, 1937. His paper, as well as the paper of Dr. Hagemeyer discussing his theses were in print at the moment. This is the reason why both these parts appear in the *Studia Ekonomiczne* although no reply can be given from the side of Dr. Kostanecki to the criticism of his ideas by Dr. Hagemeyer.

of the population are not subject to rapid or unexpected change. It is generally accepted that if a bank wishing to increase the total amount of its earning assets — either because its cash reserve has been swollen by an addition which in the opinion of its managers is in excess of the amounts they wish to keep in reserve, or because for one reason or another the bank wishes to reduce its ratio of cash to deposits — grants a new loan, the payments made by the beneficiary of the new credit will produce one of three effects: they will either a) swell the deposit accounts of other clients of the same bank, or b) through clearing-house operations increase the deposits of clients of other banks, whose cash reserves with the clearing institution will be increased by the amounts of clearing balances lost by the bank first increasing the total of its credits, or c) be withdrawn in part or in whole in legal tender<sup>1</sup>. It is further practically generally conceded that in case a) the total deposits of the bank which granted the new credit, and therefore of the whole banking system, will be increased in excess of the increase of the cash-holdings by an amount roughly equal to the reverse of the ratio of cash to deposits considered desirable. Naturally the case of all additional deposits being retained by the bank making the new loan is highly improbable, unless the bank in question is the only bank of the country and bank credits the only means of payment. The ruling view proceeds therefore to argue that case b) will take place i. e. that — as there is no reason why the relative size

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<sup>1</sup> Obviously it is possible that either the client who obtained the credit, or a person receiving the payment from him, uses the book-credit thus created to pay off a debt at this or another bank. The circumstance is often dwelt upon at great length in preliminary expositions of the problem, though in our opinion emphasis laid on this point seems rather exaggerated. A repayment on the above lines reduces the total earning assets of the given bank and places it again in the position where its cash holdings are in excess of the amounts deemed desirable by its management, so that it has to restore its earning-power by granting a further new loan. If loan *A* is used to repay loan *B*, the banking system is in a position where it cannot restore equilibrium except by granting loan *C*, and as we are concerned in the discussion not with individual loans but with net additions to their stock, the process is merely delayed by an intervening further step but is not materially altered.



of the banks of the country should change during the process of expansion — the new cash balance and the new deposits will be distributed among the several banks in proportion to the fraction of total deposits of the country which each one of them held previously — naturally always on the original assumption that the habits of payment of the population, and the principles on which the banking system conducts its policy, will not change. Any individual bank will be loath to increase its commitments in excess of the supplies of new cash which it obtains, but it is only the most crude and superficial statements which on that basis deny the ability of any amounts of cash to undergo the process of multiplication into larger advances and deposits through the activities of the banking system considered as a whole. For as every single bank finds its cash ratio rising due to an equal amount being added to the numerator (cash) and denominator (deposits) it will try to restore it to the previous figure by granting new advances. Therefore each bank although losing part of its cash balance due to the outflow of its deposits increased through the growth of its own credits will recoup part of the cash thus lost by drawing to itself part of the deposits arising from the new credits granted at each stage of the process by the other banks of the system. In the circumstances all writers assuming that the fundamental method of banking policy is the maintaining of stable cash ratios agree that the process can go on undisturbed until for the whole banking organisation the old cash ratio is restored<sup>1</sup>.

In the case described above as c), viz. where a large part of the newly granted credits is withdrawn in actual legal tender, opinions as to the typical course of outward events are perhaps less uniform: certain writers (H. Whithers can certainly be counted among them) consider that even if a large part of the new credits is withdrawn by the clients of the banks in legal tender and paid out to the non-banking classes of the community the withdrawal is in the nature of a fortuitous accident which can be made good due to the existence of certain types of industries which although selling their services for

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<sup>1</sup> For an elaboration of the difference between the position of a single bank and the banking mechanism as a whole, see C. A. Phillips, *Bank credit*, passim.

cash use themselves bank accounts and thus turn the flow of legal tender again towards the banks. Other writers however<sup>1</sup> see a certain regularity in the rate of growth of the demand for legal tender and attempt to prove that it has a definite connection with particular phases of credit expansion. Both schools of thought agree however on the whole that — if the fundamental basis of the reasoning holds good, i. e. if the habits of payment of the population do not change — the disturbance due to withdrawal of cash is more in the nature of a delay and check to the speed of the process than an alteration of its nature.

It is not however these minor disturbances and frictions which form the bone of contention between writers on monetary matters. It is not the bare physical facts but their interpretation which is the real point of dissent. As previously noted, economic opinion fairly unanimously assumes that in the above manner bank credit can expand more rapidly than cash reserves, and that an influx of cash can be followed in due time by a multiple increase in bank deposits. But the explanations of the process differ widely. The additional deposits have been created by the banks, the expansion could not have taken place, without their initiative in extending new credits, and it is this expansion which gives them the power to continue in the same direction, say in substance Hawtrey, Whithers, Keynes, Robertson, Phillips, Hahn, Hekschler, Hayek, to quote but a few among the writers of the post-war generation. Quite the contrary, reply Cannan, Gregory, Leaf, Dernburg and other writers forming the more conservative wing of economic opinion: the banks have been merely passive agents between lenders and borrowers; it is the public which by continuing its habit of depositing purchasing power coming into its hands with the banks has created the new deposits, and banks are all the while dependent entirely on the opinions and habits of the depositors: they are never able to lend a penny more than has been deposited with them, no more than a check-room can lend more umbrellas than have been deposited in it by the public and there-

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<sup>1</sup> See especially the subtle analysis of the process by Hawtrey, in *Currency and credit*, principally *Ch. II & VIII*.

fore they cannot create any previously non existing means of payment.

The discussion has been proceeding on these lines for a number of years and differences of opinion still persist even if a great number of details of the process has been elucidated. It may therefore still be useful to devote the rest of the paper, first to an examination of the purely formal and quantitative aspect of the "creation" of new deposits, and then to an analysis of the economic character of the process. In this latter part it will also be necessary to enter into its connection with a question of a more general nature, the creation of capital by credit, which seems essentially necessary for an explanation which is not to be confined within purely terminological distinctions.

## II

The growth of bank credits and bank deposits, being reflected in the balance-sheets of banks, can be described particularly clearly in mathematical terms without introducing any new assumptions or otherwise misrepresenting the trend of thought which underlies the more or less commonly accepted verbal exposition of the facts<sup>1</sup>. A bank called for the sake of convenience  $B'$  holding cash  $M$  and having made advances  $C$  (advances in the broadest sense of the word, i. e. including bills discounted, securities purchased and all other forms in which purchasing power can be placed in the hands of the public) will have on the other side of its balance-sheet

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<sup>1</sup> See the mathematical analysis of the process of credit creation in C. A. Phillips, *Bank credit*, New York 1921, articles by J. S. Lawrence, *Quarterly Journal of Economics*, August 1926, J. H. Rogers, *Proceedings of the American Economic Association*, March 1932, J. W. Angell & K. F. Fieck, *Expansion of Bank Credit*, *Journal of Political Economy*, XLI 1933. Cf. also J. M. Keynes, *Treatise on money*, Ch. 25 & 31. The present treatment differs from the extremely clear and careful presentation of the case by Angell & Fieck, as it attempts to work out a more generally applicable formula which does not take into account the specifically American factors included in the data of the problem by Angell. In general however, except for differences in the terminological approach, it is nearer to the conclusions of the latter than to those of Phillips. Certain differences of detail will be pointed out in the course of the argument.

an equal total composed of the own capital of the bank  $K$  and deposits  $D$ , so that<sup>1</sup>:

$$M + C = K + D \quad (1)$$

The policy of this and of the other banks of the system is assumed in the course of the whole reasoning to consist in a tendency to maintain a stable ratio  $R$  of the cash  $M$  to deposits  $D$ . When the cash holdings of any bank are increased by  $m$  and its deposits by an amount  $d=m$  the relation  $\frac{M+m}{D+d}$  becomes larger than  $R$ . In order therefore to restore the old ratio the bank will increase its advances<sup>2</sup> by an amount  $c$  which being reflected in a corresponding deposit  $d'$  will still keep both sides of the balance sheet equal, but will alter the

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<sup>1</sup> We have left out of account here as in the previous chapter the question what determines the amount of bank cash, whether it depends on policies of the deposit banks, on the behaviour of the public, or on the policy of the monetary authorities, in particular of the central bank. The question is a large problem *per se*, involving as it does the question of the possibility of control of purchasing power by the central monetary authority, but any solution one wishes to give to it does not influence the results of a given quantity of bank cash being placed in the hands of the deposit banks of the country. Although the scope of the discussion is thus restricted, no inexactitude is committed when isolating the two problems and the argument possibly gains in clarity.

<sup>2</sup> It is difficult to pass over in silence an entirely false argument used by Sir Walter Leaf in his attempt to disprove the credit-creating power of the banks in his *Banking*. In the numerical example quoted by him deposits of the "Big five" have shrunk in spite of an extension of their advances. It is obvious from his figures however that at the same time the banks have been reducing their holdings of marketable securities, so that their total earning-assets were shrinking. The criticism of Leaf would be relevant only if the "making of advances by a bank" were restricted to its technical meaning of granting new overdrafts or advances. It is obvious however that all the theories discussed above take the words in their broadest possible sense, meaning thereby the total purchasing power placed by banks at the disposal of the public, whether in the form of discounts or advances or purchases of securities in the market, even possibly of granting of mortgage credits; the point is even made abundantly clear by Hawtrey in *Currency and Credit*, l. c. It is self-evident that the effect of the extending by a bank of any one particular type of asset will not be reflected in the figures of its deposits — even if it produces certain shifts for individual depositors — if other assets undergo a contrary change.



above relation, since the new deposit will appear only in its denominator. The aim of the bank is to make  $\frac{M+m}{D+d+d'}=R$ , and as  $d=m$  and  $d'=c$ , the above can be written:  $\frac{M+m}{D+m+c}=R$

$$c = \frac{M+m}{R} - D - m.$$

$$\text{As } D = \frac{M}{R} \therefore$$

$$c = \frac{M+m}{R} - \frac{M}{R} - m = \frac{m}{R} - m = m \left( \frac{1-R}{R} \right) \quad (2)$$

Bank  $B'$  will not keep the total of cash, nor of the new deposits<sup>1</sup>. The usual reasoning assumes that, as there is no reason to suppose that the size of the various banks of the country will undergo a change, the proceeds of the new credit will be distributed among all other banks in proportion to the amount of deposits which they hold previously, i. e. that bank  $B'$  can therefore be expected to keep an amount of deposits equal to  $d' \cdot s'$  (where  $s'$  represents the ratio of the deposits of bank  $B'$  to the total deposits of the given banking system) and the amount lost to other banks — equal to  $d'(1-s')$ , will presumably be distributed so that each bank  $B''$  find its deposits and cash balance swelled by  $d' \cdot s''$ .

Verbal expositions of the mechanism proceed to argue therefore that bank  $B'$  faced with the probability of this loss of cash and deposits will hesitate to make at this stage a loan

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<sup>1</sup> Phillips assumes that any amount of cash deposited with a bank by a customer is a permanent acquisition of that bank and is not subject to any drain until the bank proceeds to enlarge the amount of its credits. Angell & Fieck on the contrary base their calculations on the supposition that the deposit arising from the original cash increase (in our own notation  $d$ ) is subject to the same "primary" and "secondary" drains as the deposits arising from the granting of new credits (in our notation  $d'$ ). In our opinion there is no convincing reason why either Phillips's or Angell's supposition as to the subsequent behaviour of the depositors of cash should be generally true. Both, for that reason, as well as for the simplification of the formulas we prefer to base the calculations on the amount of new cash which remains in the hands of the bank after such withdrawals, if any. The new cash  $m$  in our notation corresponds therefore rather to Angell's  $c_3$  than to his  $c$ .

larger than the new cash in its hands<sup>1</sup>. This does not seem however to be strictly exact, even if, as occasionally happens, the statement is qualified by saying "if all banks of the country are of approximately the same size". The proper approach to the problem would seem to be the following: the aim of bank  $B'$  is always to maintain a stable ratio between its cash and deposits; if therefore in the above example it makes an advance  $c$  equal to the amount of new cash  $m$ , its deposits will be first increased by the same amount and then both its cash and deposits will be diminished by  $m(1-s')$ , so that its cash will be equal to  $M+ms'$  and its deposits to  $D+d+d's'$ . But it does not follow necessarily that by this means the purpose of the bank has been attained and that

$$\frac{M+ms'}{D+d+d's'} = \frac{M}{D} = R \quad (3)$$

The size of advance  $c$  necessary to bring about the desired equilibrium depends as a matter of fact on the relation between  $R$  and  $s'$ . As immediately after granting the credit the deposits will be swelled by  $d'+c$  and then both cash and deposits will be reduced by  $c(1-s')$  therefore it is  $\frac{M+m-c+cs'}{D+m+cs'}$

which has to equal  $R$ .

Since  $D = \frac{M}{R}$  the above can be written:

$$\frac{M+m-c+cs'}{\frac{M}{R}+m+cs'} = R \quad \text{therefore}$$

$$M+m-c+cs' = R \left( \frac{M}{R} + m + cs' \right) \quad \text{and further}$$

$cs' - c - Rcs' = Rm' - m'$  so that:

$$c = m \frac{1-R}{1-s'(1-R)} \quad (4)$$

<sup>1</sup> Curiously enough, Phillips, when working out his coefficients of expansion, does not take into account the relative size of the bank in question. The point is treated however with all the proper emphasis by Angell & Fieck.

In other words the credit which a bank has to grant in order to restore its original cash ratio is equal to the amount by which its cash reserve has been swollen only when according to (4) above,  $1-R=1-s'(1-R)$  which will occur only when  $s'=\frac{R}{1-R}$ , that is when the proportion of deposits held

by the bank under consideration to the total deposits of the banking system is slightly larger than the cash ratio which this bank is trying to achieve. In all cases, however, where the bank in question holds a larger proportion of total deposits than described by expression (5) i. e. where  $s'=n\frac{R}{1-R}$

( $n$  being positive and larger than unity) it can grant new credits even in excess of the amount of new cash received on deposit before reverting to the original cash ratio, and that excess amount will increase *pari passu* with the increase of the size of the bank. For as the expression ruling the size of

the new credits to be granted:  $\frac{1-R}{1-s'(1-R)}$  can be written:

$$\frac{1-R}{1-n\frac{R}{1-R}(1-R)} = \frac{1-R}{1-nR} \quad (5)$$

it becomes obvious that its value increases above unity as  $n$  (representing the size of the bank in relation to its cash-ratio) becomes larger<sup>1</sup>. If on the contrary a bank holds less deposits than the amount indicated by (5), i. e. if in the above expression  $n$  is positive but smaller than unity, the new credit will resorte the previous cash-ratio already before it reaches the amount of new cash reserves. The relationship indicated by these formulas has a twofold significance: first of all it indica-

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<sup>1</sup> Incidentally if  $S'$  becomes equal to unity, i. e. if the bank in question becomes the only bank of the given monetary system, expression (4) can be written  $\frac{1-R}{1-1+R} = \frac{1-R}{R}$  or formula (2) discussed in the previous paragraph. The case of the banking system being composed of only one bank, which in verbal accounts can be arrived at only by artificially simplifying the problem, becomes the natural limiting case in the mathematical formulation.

tes an important difference in the fit of the theoretical pattern to the realities of practical banking: if in a given monetary system banks are few and consequently each one of them holds a large proportion of the country's deposits they can expand their credits at a time of rising cash reserves even more rapidly than the rise of the latter, without endangering their cash-ratios. If however the system is composed of numerous small banks, the expansion of the credit-structure cannot take place except by numerous successive stages of slow increases. Secondly, it forms an obviously unconscious but nevertheless probable reason for the varying degree of interest which economists of various countries take in the problem under discussion: where cheques are in everyday use and banking has reached the stage of advanced concentration, the expansion of credits can proceed at a pace which makes the process significant and interesting to the practical as well as theoretical observer. Where however the banking system is still split up into numerous and heterogenous units, the processes involved become so slow and gradual that the practical significance of the theory is small.

Reverting to the main trend of thought, one can legitimately investigate how the further development of the credit avalanche will take place. It will facilitate very greatly the next stage of the reasoning without invalidating its correctness if we assume that all banks of the country are of the size discussed above, i. e. that they are in the position where they are just able to restore their desired cash-ratios by making advances equal to the increase in their cash-balances<sup>1</sup>. Each bank then, though losing part of its own cash due to withdrawals of advances which it made, recoups part or all of it by drawing to itself part of the deposits arising from advances

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<sup>1</sup> If the banks are of a different size the increase of credit at each stage will be larger or smaller, but will tend towards the same final limit. If the banks are in addition unequal in size the clean flow of the cycles will be interrupted in the sense that cycles of uneven magnitudes will overlap and make a simple account of the events impossible, but in the end the process will not be prevented from reaching the same limit. It is of course necessary however that all banks of the system try to attain the same cash ratio, any discrepancy in their policies in this respect making a number of reservations as to the exactitude of the above pattern necessary.



made by the remaining banks of the system. For, as the latter have acquired at this stage of the process cash equal to  $m(1-s')$  their cash ratio has risen and in order to return to the previous ratio they will have to make jointly an advance equal to the increase in their reserves. Bank  $B'$  will then receive back its proportional part of the cash relented by others, i. e. an amount equal to  $ms'(1-s')$ . As this in turn increases its reserves above the desired level, bank  $B'$  will grant a new advance equal to the last named amount and losing again the same proportion of cash and deposits to other banks will find itself at the end of the second cycle of credit expansion with a new addition of cash and deposits of  $ms'^2(1-s')$ . The process will continue according to the same schedule, bank  $B'$  being left at the end of each cycle  $n$  of credit expansion with both cash and deposits increased by  $s'^n(1-s')^{n-1}$ . As both  $s'$  and  $1-s'$  are always fractional, the increase will be less and less rapid, but will proceed nevertheless until the new point of equilibrium is restored, i. e. until for bank  $B'$

$$\frac{M + m's + ms'^2(1-s') + \dots + ms'^n(1-s')^{n-1}}{D + d + d's' + d's'^2(1-s') + \dots + d's'^n(1-s')^{n-1}} = R \quad (6)$$

All other banks can and have to be assumed: 1) to have the same cash ratio in mind as object of their policy, 2) to have started from the desired cash ratio before the cash increase occurred, 3) to maintain their relative sizes all through the process. Each bank therefore will continue expanding credit also until its original cash ratio is restored, and this can take place only when each one of them finds itself in the position of new equilibrium analysed above for one of them. Since the total holdings of cash of all banks taken together have increased by  $m$ , it is easy to calculate that this will take place when their total deposits will have increased by the quotient discussed above of  $\frac{1-R}{R}$ .

The resemblance of the above scheme of events to reality is occasionally questioned — especially by continental writers — even independently of the question of interpretation of those events — on two scores: that a banker cannot base his credit policies on the above assumptions as he is threatened at every

stage of the proceedings by increased withdrawals of legal tender, and that a strict adherence to cash-ratios is so simple and special a concept that it cannot fairly represent „real“ banking policy.

Both objections merit more than a cursory examination. If circumstances are such that a considerable part of any new advance made by any bank is rapidly withdrawn in legal tender, the mathematics of the growth of bank deposits obviously undergo a change. If every increase of bank credits and deposits by bank  $B'$  is accompanied by an increase of demand for cash on the part of the non-banking classes, whose proportion to the increase of deposits<sup>1</sup> can be called  $N$ , then the original increase in deposits amounting to  $d'$  will be followed by a loss of deposits and cash<sup>2</sup> equal to  $d'(1 - S' + N)$ . The increase which the extension of credit by bank  $B'$  produces in the cash reserves of other banks is naturally also reduced and amounts to only  $d'(1 - S' - N)$ . From now on events can take a threefold course:

1) The demand for additional legal tender can be temporary and produce only a momentary check on the expansion of bank credit (as for instance happens in the case when increased payments of wages return within a short period in the form of increased deposits of cash by owners of department stores, saloons etc.).

2) The increase in demand for cash can be of a permanent nature, but  $N$  remains constant in all the successive stages of credit expansion. In that case the process of expansion is slowed down and either a larger number of gradual increases of credit have to take place before the old cash-ratio is restored, or else the amount of cash subject to the process proves to be actually smaller than the amount which appeared as the original increase of bank reserves. The criticism referred to above serves here at least to bring out the existence of an implied assumption of the argument, which is not usually

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<sup>1</sup> Angell and Ficek proceed slightly differently in form, but similarly in substance by introducing a factor  $h$ , the relation between total deposits held by banks, and legal tender held by the public.

<sup>2</sup> I. e. a reduction of the total of clearing balances and legal tender actually in the vaults of the bank.

stated quite expressly: it is always assumed, as we have noted, that the habits of payment of the population have to remain unchanged, i. e. that the proportion of payments made by legal tender to payments made by credit instruments has to remain stable during the process. What is usually not said however<sup>1</sup> is that it follows from the above — if one does not want to bring into the picture further complicated considerations as to the changes in velocity of circulation of means of payment — that an increased amount of cash can be regarded as definitely acquired by the banking system only if simultaneously the supply of legal tender in circulation outside of the banks increases sufficiently to take care of the volume of cash payments corresponding to the volume of payments by credit instruments not only at the initial moment, but also at the time when the increased cash reserves of banks have been fully expanded into additional deposits. In that sense — but in that sense only — is it possible to say that it is not every increase in the cash holdings of banks which proves that the banking system is in a position to undertake an expansion of the credit structure, but only an increase of cash in banks coupled with an increase of legal-tender outside of the banks.

3) The value of  $N$  can in itself vary while the expansion of deposits takes place. In that case, if the changes are erratic, the basic assumptions of the reasoning manifestly do not fit the facts of reality, and cannot be used for any forecasting of the trend of events. If however a certain regularity of the changes of the proportionate demand for legal tender are observed, interesting deductions can be made as to the connection of these changes with particular phases of the cycle of credit expansion<sup>2</sup> modifying rather than altering the regularity of the events as described above.

The second supposition, i. e. the idea that any banker, when in the throes of the eternal dilemma of maximum earning power and complete liquidity will adhere to the ratio of cash to deposits as a fixed method of arriving at practical decisions

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<sup>1</sup> The factor  $h$  of Angell & Ficek brings out however the full importance of the relationship.

<sup>2</sup> See Hawtrey, *Currency & Credit*, l. c.

is obviously a great simplification of actual banking policy. The approach to the problem seems nevertheless fairly legitimate as far as English banks of deposit are concerned<sup>1</sup>, but when dealing with American and especially continental banks one does actually take a great deal of liberty in considering that formula as a fair indication of their policy. If — as on the continent — deposit banks can have recourse to the rediscount facilities of the central bank, their policy depends not so much on their holdings of cash and semi-cash but on the proportion which their liquid (i. e. rediscountable) assets bear to their unliquid (i. e. unrediscountable) assets<sup>2</sup>. It is therefore quite legitimate to ask in how far the previous elaborate scheme of reasoning can be applied to a banking system different from the English. In principle it is possible to form a mathematical pattern of the size of the possible expansion of credit only in connection with a banking policy based on cash ratios, but already not if the policy is based e. g. on "liquidity-ratios" in the above sense. But on the other hand, even if the banking system adheres to the latter type of policy, its inherent ability to multiply credit is not abolished, although the limits of the increase cannot be defined with any pretence to close approximation. The working out of the modifications of the details of the course of events if other types of banking policy are taken as characteristic of the given monetary mechanism is an interesting problem in itself, but it changes rather the accuracy of details than the general principle involved.

### III

The slogan of the "creation of deposits by banks" is very striking, but a discussion confined to its mere affirmation

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<sup>1</sup> See W. F. Crick, *The genesis of bank deposits*, *Economica*, Vol. VII. Nr. 20, 1927.

<sup>2</sup> The American system is in an intermediate position: banking legislation is based mainly on English practice and seems to be directed towards making by Act of Congress American banks as good as English banks; but although the former have to conform to a complicated system of legal reserve ratios, they can in fact conduct a policy more akin to that of continental banks, as they have at their disposal the rediscount facilities of the Federal Reserve System.



or negation does not seem to constitute a very happy nor fruitful method of approach towards an explanation to the nature of the process of expansion of bank credits and deposits. A discussion on that basis is in danger of getting lost in the quicksands of purely formal distinctions. Once it is admitted that an increase of deposits can take place beyond the increase of bank cash — the balance-sheet of any bank proves that such has been and can be the case — any strict and complete reasoning has to reach the point at which it becomes obvious that such an increase can take place only if a twofold condition is fulfilled:

a) if the banking-system does not undertake a policy of “sterilizing” the increase of cash but is willing to supply new credits by adjusting the volume of its earning-assets so as to keep its cash ratio stable, and if

b) the public shows a willingness to leave on deposit with banks a proportionate part of the increase in its means of payment, i. e. if its demand for new bank deposits is sufficiently elastic to allow an increase of the existing volume of the liabilities of the banking system..

The advocates of the “deposit-creating power” of the banks lay stress on the first of the two considerations — the opponents dwell on the significance of the second. But it is a kind of scholastic distinction to insist on giving one of these two causes of the expansion primary importance<sup>1</sup> and on trying to call exclusively one or the other of the two parties the “creator” of the new deposits. When even so brilliant and penetrating a writer as Mr. Keynes first allows himself to be carried away by his desire to range himself on the seemingly less orthodox side and says that: “there can be no doubt that in the most convenient use of the language, all deposits are “created” by the bank holding them”<sup>2</sup> but nevertheless has to distinguish a few lines further two ways in which

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<sup>1</sup> An attempt at avoiding the dilemma is often made in the form of a distinction between “primary” deposits arising out of an actual deposit of cash and „secondary“ deposits arising from an increase of bank credits. See the thoroughly convincing refutation of that point of view by Hayek, *Geldtheorie & Konjunkturtheorie*, p. 92, partly quoting Neisser, *Tauschwert des Geldes*. <sup>2</sup> *Treatise on money*, I, p. 30.

"banks create money"<sup>1</sup> the insufficiency of a yes or no answer to the fundamental question becomes particularly obvious.

In the balance-sheet of a bank total assets and total liabilities always balance, so that every movement of its earning-assets is either counterbalanced by a contrary movement of cash or is reflected in the figure of its deposits. The same bookkeeping process, however, can cover two entirely different economic phenomena: the demand for the additional deposits can proceed either from an increase in the demand for current means of payment or from an increase in the amount of savings which the public wishes to keep in the form of bank deposits<sup>2</sup>.

The existence of a very definite differentiation in the attitude of the public towards the banks in the two cases suggests that an examination of the process might yield a solution of the dilemma. The question of the creation of new deposits is closely akin to, though not identical with, the question of the creation of new capital by credit. Especially more recent developments of theories concerning the latter process contain a trend of thought which, when applied to the point under debate, gives a broader and economically more fundamental interpretation of the economic processes going on behind the façade of the entries in the books of the banks than would otherwise be obtainable.

It is not possible to give at this place more than a brief outline of the argument concerning the relation of credit to the growth of national capital. The recent developments which will be found to be of assistance in the analysis of the origin

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<sup>1</sup> A distinction, by the way, which is no more convincing nor useful than that between primary and secondary deposits.

<sup>2</sup> The distinction is naturally not identical with the division of deposits withdrawable at shorter or longer notice which banks show in their balance-sheets in accordance with the banking habits and legislation of their respective countries (e. g. "current accounts" and "deposits" in England, deposits withdrawable at under or over 30 days notice in America etc.). The latter being based on a series of purely arbitrary and accidental practices of banks as to charges and interest on various types of accounts, considerations of administrative convenience of customers etc. can hardly be considered as even a rough indication of the above basic distinction of the reasons for holding bank deposits.

of bank deposits are based, however, on a discussion which originated with the founders of political economy. In pre-classical days economists were mostly of the opinion that new money is tantamount to new capital, that therefore credit, by multiplying the circulating media, actually increases the size of national capital. It is the merit of the classical economists, especially Adam Smith and Ricardo to have exposed the fallacy underlying that assumption. By creating the quantity theory of money they have been able to point out that if monetary capital is increased, the stock of national capital does not grow thereby, that only the price of the stock of existing real capital is increased when measured in the same monetary unit. But later economists, beginning with Macleod and ending up with the neoclassical revivalists have nevertheless pointed out that in two respects at least credit does "create" capital.

In a society where money is used as a medium of exchange but where credit is unknown and therefore also no banking organisation exists, any person wishing to provide for future consumption has only a twofold choice: to hoard or to invest their savings in their own enterprise. If that society evolves to the point of becoming acquainted with credit — but not enough to create a banking organisation — credit can be extended only directly by the savers to the entrepreneurs. Any saver has from then on however a third alternative open to him, i. e. to lend his savings to an entrepreneur who, for one reason or another, can pay a higher rate of interest than that obtainable in the savers' own enterprise and obviously higher than the nil interest on hoards. In these circumstances credit produces a growth of capital by increasing the physical volume of economic goods. If it does not do so directly as the preclassical school thought, it does speed up the rate of production of goods in general and hence also of capital goods. For credit places at the disposal of entrepreneurs, eager to increase their existing scale of production, purchasing power which otherwise would either a) never have been saved at all or b) would have remained in the hands of the savers in the form of non-productive hoards or c) would have been used by them in their own enterprises at a lower rate of return.

Independently however of permitting in the above sense a future accelerated growth of real capital, credit increases also the amount of national capital apparent in a "point of time" analysis. The trend of thought appears in the work of Böhm-Bawerk, then Wickseil, especially as developed by Mises and Hahn on the one hand and Robertson on the other. Credit by placing entrepreneurs in a position in which they can actually come out into the market with their, otherwise only abstract, demand for goods and services increases capital not only by the influence which it has on the future rate of growth of the real supply of goods, but also by changing the amount of capital within the already existing stock of goods. The latter is namely composed partly of consumers goods and of capital goods, but also partly of goods whose character cannot be actually determined until economic processes begin to take place (e. g. coal which can be used either as fuel in industrial processes or for the heating of the homes of the ultimate consumers). If entrepreneurs obtain through the use of credit additional<sup>1</sup> purchasing power (it is a natural assumption that in modern society consumptive loans form a negligible fraction of the existing credit structure and that practically all borrowers are entrepreneurs wishing to increase their fixed or their working capital) they are placed in a position where they not only can purchase part of the existing stock of capital goods, but also to convert part of the "indeterminate" goods into capital goods by withdrawing them from consumption and using them in productive processes.

The coming into play of a banking organisation first of all increases the amount of credit which can be and is being granted within a given economic organisation: as it makes the working of the credit machinery easier, smoother and more efficient, reduces the spread between the bid and ask rates for capital and brings together "unknown lenders" and "unknown borrowers" it makes credit transactions more numerous than they could have been in a bankless world. So far however

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<sup>1</sup> The purchasing power of the entrepreneurs is "additional" in the sense that in the case of an absence of credit that purchasing power would have been withheld by the savers in one of the ways enumerated on the previous page.



the banks still only act as middlemen between the lenders and the borrowers, who in a sense could have extended these credits directly to the borrowers, so that the credit thus granted can be called after Hahn "intermediary credit".

The existence of a banking system introduces however a different and entirely new factor, arising out of the use of claims against banks as means of payment. The demand for bank deposits as a technical means of storing and transferring purchasing power enables the banking mechanism to "find a market" for a supply of bank deposits in excess of the demand arising out of a growth of the monetary savings of the community, and so to extend credits which are not preceded or accompanied by any conscious attempt of the saving classes at a reduction of the scale of their consumption. The latter form of expansion of the credit structure can be called with Hahn "inflationary credit", provided one keeps in mind the reservations with which he qualifies the word<sup>1</sup>.

If a given economic unit is in equilibrium, the then existing distribution of income between consumption and saving assures an approximate stability of the price of consumption and production goods and also an approximate stability of prices and distribution of flow of intermediate goods. Any falling off of the "propensity to consume" which manages to translate itself into an extension of new credit by the saving

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<sup>1</sup> It cannot be sufficiently stressed to what extent the word differs from the ordinary use of "inflation" in the sense of an approach to a state of disequilibrium at the end of a series of rises of prices. Especially under the working of the pre-war gold standard, the expansion of the credit structure by banks often was a method of approaching equilibrium, not of moving away from it. The present paper discusses the case where the cash holdings of the banking system are increased. The increase can proceed from a growth of the issue of paper money by a central bank, and in this case the popular meaning of "inflationary" and the meaning of the word as used above are not far apart. But under the old gold standard the most usual and natural way in which the cash supply of a banking system became redundant was an inflow of gold from abroad, and that could not have any permanence unless the price-level of that country was lower than the world price level. In that case however a rise of prices within the country was necessary to restore international equilibrium and the "inflationary" policy of the banking system worked precisely towards that end.

to the producing classes<sup>1</sup> will lower both the volume of consumption goods purchased and the prices at which the transactions take place, while simultaneously the increased purchasing power of entrepreneurs will enable them to acquire a larger volume of producers goods even at a higher level of prices. But even if the fall of the prices of the consumable goods will not be necessarily equivalent to the rise in prices in capital goods, as the elasticities of supply and demand of the two classes of goods may not be equal, a definite tendency for their prices to move in opposite directions will develop and that irrespective of whether a smaller amount of credit has been extended directly by the lenders to the borrowers or a larger one through the intermediary of the banking organisation.

If however the expansion of credit has an "inflationary" character, the change of the relation of consumption to capitalisation has an entirely different effect on prices: capital goods rise in price under the influence of the additional purchasing power given to the entrepreneurs, but the price level of consumption goods also rises instead of falling as in the previous case. The ordinary laws of supply and demand force consumers to satisfy their need of these goods in competition with the bids of the beneficiaries of the new credits. Since however the total purchasing power of the consumers is *ex definitione* unchanged in units of purchasing power and their demand schedules are not modified by any falling off in their propensity to consume, they have to consume for the same amount in money a smaller supply of goods at higher prices. Wicksell, in a doctrine brilliantly developed by Mises and Robertson has described the process which reduces the physical volume of consumption while real demand for productive goods increases as „forced saving”<sup>2</sup> and by so doing has indicated

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<sup>1</sup> This formulation deliberately excludes from the reasoning the cases where the working of the price-mechanism is disturbed by part of the savings being hoarded, a possibility which can be left out of account in the present brief outline of the argument.

<sup>2</sup> The expression, although very picturesque, may lead to an over-emphasis of the only partial resemblance between the processes of voluntary and involuntary saving. Hahn is perhaps in less danger of overstating the case when he speaks about "*gezwungene Konsumeinschränkung*", forced reduction of consumption.

a significant connecting link between banking policy and the flow of economic life<sup>1</sup>.

The simultaneuous rise in prices of both consumption and production goods caused by "inflationary" credits granted by the banking system is, though far greater in range of extensibility, similar in nature, to the effects of dehoarding in a bankless economy (case *b* discussed on p. 17). What is unique in the present case however is the complete passivity of the public in regard to their demand for goods and in their demand for bank deposits. It is not the consumers who desire to increase their monetary savings or diminish the intensity of their aggregate demand for goods, but they (as well as producers) are merely forced to keep larger balances in order to meet a volume of payments which has been swollen by the general rise of prices under the stimulus given by the banking system.

At this point of the reasoning the distinct division between a passive public and an active banking system suggests the carrying over of the distinction onto the question of responsibility for "creating" the increased deposits. In the case where the stimulus lies so clearly on the part of the banks<sup>2</sup>

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<sup>1</sup> It is an important and interesting point, whose discussion transcends however the limits of the problem debated in this paper, whether "forced saving" means a transition from the initial equilibrium to another equilibrium at a higher level of prices, or whether it is the mechanism of a movement away from the point of equilibrium and, consequently, the beginning of cyclical fluctuation. The possibility of the real social income increasing as a result of the creation of the new productive enterprises, and thereby "taking up the slack" of the means of payment militates in favour of the first possibility. It is also possible however to argue that the rise of prices will meet a demand so inelastic that the propensity to consume will increase (in other words that the rise of prices will not leave the demand schedules of consumers unaltered, as had been supposed above) and hence that the creation of new capital by forced saving will be more than counterbalanced by the falling off of voluntary savings, so that the net creation of capital will not proceed at a rate sufficiently rapid to avoid a collapse.

<sup>2</sup> It is possible to argue that it is not the banks but the entrepreneurs eager for more credit who gave the original stimulus to the expansion. In the theory of business cycles Schumpeter e. g. makes a great deal of the point. But, in the present case, to call the entrepreneurs the "creators" of the new deposits would be a glaring transgression against the principle *causa proxima non remota spectatur*.

it is perfectly legitimate to call them the „creators“ of the new deposits. It will greatly clarify the problem however if in the other case one draws frankly the opposite conclusion. If the increase of total deposits of a banking system, even though accompanied by the extension of the credits granted by these banks takes place without a simultaneous rise in the prices of both consumers and producers goods<sup>1</sup> it is because the new deposits are not being used as net additions to stocks of money for current expenses but are absorbed by the flow of new savings seeking employment as bank deposits. The depositors have been reserving a rising part of their income not for consumption but for savings, which in turn satisfied the need of entrepreneurs for additional working capital. In these conditions it will therefore be only fair, and not inconsistent with the plain meaning of the terms used, to give the public due recognition for their part in the extension of the credit structure and call them outright the „creators“ of that particular addition to deposits.

In view of the preceding discussion it will be obvious that the distinction does not in any sense contradict the bilateral character of the process of expansion of bank deposits. It does not obviate the necessity for any presentation of the case to stress the need of both a willingness to lend and relend of the part of the banking system and of a willingness to deposit on the part of the public. It indicates however, that although „primary“ and „secondary“ deposits become undistinguishable during a process of expansion, it is nevertheless possible to give a slight, but very definite logical priority to one or the

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<sup>1</sup> If an economic organism is in a state of expanding equilibrium — i. e. if the volume of consumption and production goods increases without cyclical fluctuations and at a rate not higher than the rate of saving — a strict repetition of the stages of production being impossible precisely due to the accumulation of the savings from previous productive stages — with a particular distribution of social income between saving and consumption, savings can grow without disturbing the price structure, provided the rate of growth remains at that particular level. Any increase of the rate of growth of savings however cannot take place without producing a fall of prices of consumers goods, and — if the savings are not hoarded but invested productively — a simultaneous rise of prices of producers goods.



other of the two parties. Even if to do so one has to take the roundabout way of a specific examination of the price structure, one gains thereby a tool of analysis which can and should be taken into account in any extensive study of economic realities.

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### Streszczenie

*Jan Kostanecki: Tworzenie depozytów przez system bankowy*

I. Panuje zgoda co do tego, że rozszerzenie kredytów ze strony banków powiększa sumę środków płatniczych. Powracają one do banków w formie depozytów. Odnosi się to zwłaszcza do systemu czekowego i kliringowego. Gdy bank udziela nowej pożyczki, wypłaty dłużnika wywołują jeden z trzech skutków: (a) powiększają się depozyty na rachunkach innych klientów tegoż banku, (b) powiększają się depozyty klientów innych banków, (c) pożyczka zostaje zrealizowana w postaci legalnych środków płatności. Nawet jeżeli pożyczka służy do spłacenia długu zaciągniętego uprzednio przez klienta w innym banku, spłacenie wywoła tendencję do rozszerzenia kredytu ze strony owego banku, sytuacja pozostanie więc w skutkach taka sama.

W wypadku (a) depozyty zwiększą się w stosunku do zapasów kasowych. Przyjmuje się ogólnie, że zajdzie wypadek (b) tj. nowe depozyty i nowe zapasy kasowe rozdziela się pomiędzy różne banki proporcjonalnie do dawniej posiadanych przez nie depozytów.

Skoro stosunek zapasów kasowych do depozytów zwiększy się dzięki dodaniu równych sum do każdej z tych wielkości, każdy bank będzie dążył do przywrócenia dawnego stosunku przez rozszerzenie udzielanych kredytów. Na tej drodze każdy bank odzyska część gotówki utraconej na skutek udzielenia pożyczki.

Wypadek (c) niektórzy pisarze (np. Whithers) uważają za raczej przypadkowy i przypuszczają powrót do pieniądza bankowego, inni, np. Hawtrey, sądzą, że popyt na gotówkę wzmacnia się w pewnych fazach ekspansji kredytowej. Wszysey

jednak uważają ten wypadek za zakłócenie, hamujące tempo procesu, ale nie zmieniające jego istoty.

W wyjaśnieniu ekspansji kredytów bankowych spotykamy różnice: Hawtrey, Whithers, Keynes, Robertson, Philipps, Hahn, Hekscher, Hayek twierdzą, że ekspansja kredytów wynika z iniekcji banków, Caman, Gregory, Leaf, Dernburg sądzą, że publiczność tworzy nowe depozyty, banki zaś nie mogą udzielić więcej kredytów, niż złożono w nich pieniędzy. Autor rozpatruje tę sprawę w związku z zagadnieniem stworzenia kapitału w drodze kredytu.

II. Opisane zjawiska ujmuje autor w następujące formuły matematyczne: bank ( $B'$ ) trzyma rezerwy ( $M'$ ), udzieliwszy kredytów (w najszerszym znaczeniu) ( $C'$ ), uzyskuje po drugiej stronie bilansu równą sumę, składającą się z kapitału własnego banku ( $K$ ) i depozytów ( $D$ ).  $M + C = K + D$ . Banki dążą do utrzymania stałego stosunku  $\frac{M}{D} = R$ . Gdy zapasy gotówki wzrastają o  $m$ , a jego depozyty o  $d = m$ , to  $\frac{M+m}{D+d} > R$ . Bank dla utrzymania  $R$  powiększy kredyty o  $c$ , co odbije się w równym przyroście depozytów o  $d'$ . Wówczas stosunek zapasów kasowych do depozytów wygląda następująco:

$$\frac{M+m}{D+d+d'} = R, \quad \frac{M+m}{D+d+d'} = \frac{M+m}{D+m+c}$$

$$c = \frac{M+m}{R} - D - m, \quad \text{skoro} \quad D = \frac{M}{R},$$

$$\text{to } c = \frac{M+m}{R} - \frac{M}{R} - m = \frac{m}{R} - m = m \left( \frac{1-R}{R} \right).$$

To rozumowanie odnosi się do wypadku (*a*), gdy wszystkie kredyty udzielone przez bank wracają do niego w formie depozytów. W wypadku (*b*), jeżeli założymy, że nowe depozyty rozdzielają się między banki proporcjonalnie do tego, jak były rozdzielone dawne, depozyty danego banku zwiększą się w pierwszej fazie o taką część wypuszczonych przez niego kredytów, jaką częścią depozytów ogólnych były jego dawne depozyty, zapasy kasowe zmniejszą się zaś wskutek wypuszczenia kredytów tylko o różnicę między sumą wypuszczonych kredytów

a nowo zyskanych depozytów, czyli o to, co z kredytów danego banku uzyskają jako depozyt inne banki.

Jeżeli wysokość nowo wypuszczonych kredytów  $c$  będzie odpowiednio dobrana, bank może już po pierwszej fazie osiągnąć chwilową równowagę. Wysokość ta zależy od stosunku między wyżej określonym  $R$ , a  $s'$ , które oznacza stosunek depozytów tego banku do ogółu depozytów w systemie bankowym. Jeżeli mianowicie  $s' = \frac{R}{1-R}$ , czyli gdy stosunek ilości

depozytów trzymanych przez bank do ogółu depozytów jest nieco większy, niż stosunek zapasów kasowych tego banku do jego depozytów, wysokość ta powinna być równa wysokości przyływu depozytów, który skłonił bank do przedsięwzięcia ekspansji, jeżeli  $s' > \frac{R}{1-R}$  i im jest większe, tym bardziej powinna ją przewyższać, jeżeli zaś i im  $s' < \frac{R}{1-R}$ , tym powinna być mniejsza. Autor dochodzi do tego wzoru w sposób następujący:

Stosunek zapasów kasowych do depozytów na końcu pierwszej fazy ekspansji  $= \frac{M + m - c + cs'}{D + m + cs'}$  i powinien równać się  $R$ . Ponieważ  $D = \frac{M}{R}$ , więc  $\frac{M + m - c + cs'}{\frac{M}{R} + m + cs'} = R$ , wobec

$$\text{tego } c = m \frac{1-R}{1-s'(1-R)}.$$

Jeżeli  $s' = \frac{R}{1-R}$ ,  $c = m$ ; jeżeli  $s' = n \frac{R}{1-R}$ , a  $n$  jest dodatnie i większe od jedności, wtedy  $c > m$ , jeżeli  $n$  jest dodatnie, ale mniejsze od jedności  $c < m$ .

Z tego wyprowadza autor wytłumaczenie faktu, że w kraju niewielu wielkich banków kredyty mogą być bezpiecznie powiększone przez bank dużo szybciej, niż wzrastają rezerwy, w kraju zaś wielu małych banków ekspansja kredytowa następuje powoli i stopniowo. Tym też wyjaśnia autor różny stopień zainteresowania autorów różnych krajów tymi zagadnieniami.

To jest jednak dopiero pierwsza faza ekspansji. Banki bowiem, które otrzymały część kredytów udzielonych przez dany bank, powiększają procentowy stosunek rezerw do depozytów, skłania je więc to do wypuszczenia nowych kredytów, równych przypiływowi depozytów (jeżeli założymy, że dla każdego banku

$s' = \frac{R}{1-R}$ , co ułatwia rozumowanie, ale nie jest

dla jego słuszności konieczne), a więc sumarycznie różnicy między kredytami, udzielonymi przez nasz bank, a spowodowanym przez ekspansję kredytu powiększeniem depozytów. Z tej sumy nasz bank znowu otrzyma taką część, jaką częścią ogółu depozytów były jego depozyty i to znowu skłoni go do wypuszczenia nowych kredytów. Ten proces będzie się póty powtarzał, tworząc dla danego banku wzór

$$\frac{M + ms' + ms'^2(1-s') + \dots + ms'^n(1-s')^{n-1}}{D + d + d's' + d's'^2(1-s') + \dots + d's'^n(1-s')^{n-1}}$$

dopóki wszystkie banki systemu bankowego nie osiągną z powrotem pierwotnego stosunku zapasów kasowych do depozytów. Ponieważ zaś ich wspólny kapitał rezerwowy zwiększył się o  $m$ , więc nastąpi to, gdy ich wspólne depozyty zwiększą się o

$$\frac{1-R}{R}.$$

To rozumowanie napotyka na zarzut, że wzrost kredytów może być wycofany w formie legalnych środków płatności i wskutek tego nie powiększyć depozytów. Autor rozróżnia tu 3 ewentualności: 1) dodatkowy popyt na legalne środki płatności jest przejściowy, wtedy powoduje tylko chwilową przeszkodę w normalnym biegu wypadków; 2) popyt jest trwały i jego stosunek do ekspansji kredytowej banku jest stały (Angel i Ficek biorą tu pod uwagę stosunek między całym zasobem depozytów w systemie bankowym, a zapasem legalnych środków płatności trzymanym przez publiczność); w tym wypadku, jeżeli ekspansja gotówki równoważy ekspansję kredytów bankowych, proces ulegnie tylko opóźnieniu; jeżeliby nie równoważyła, ostateczny przyrost rezerw bankowych mógłby być mniejszy, niż pierwotny, ten wypadek jednak kolidowałby z założeniem autora, że stosunek wypłat kredytowych do pieniężnych w ciągu całego procesu nie ulega zmia-



nie, jeżeli bowiem pominiemy zbyt zawile dociekania nad szybkością obiegu pieniądza, możliwe jest to tylko wtedy, gdy ekspansja gotówki wyrównuje ekspansję kredytową; 3) jeżeli między popytem na gotówkę a popytem na kredyt nie możemy wyśledzić żadnych stałych stosunków, wtedy oczywiście nie możemy także przewidzieć przebiegu procesu ekspansji kredytowej.

Te zasady odnoszą się przede wszystkim do banków angielskich. W bankach kontynentalnych miarodajnym jest raczej stosunek aktywów, zdalnych do redyskontu w banku centralnym, do niezdatnych. Banki zaś amerykańskie mają wprowadzić ustawowo określony stosunek rezerw, jednak Federal Reserve System daje im możliwość prowadzenia polityki podobnej do polityki banków kontynentalnych. Nawet jednak w stosunku do banków kontynentalnych i amerykańskich zmiany ulegają jedynie szczegóły, zasadniczy tok rozumowania zostaje jednak niezmienny.

III. Następnie autor zastanawia się nad kwestią „tworzenia depozytów przez bank”. Podkreśla on, że są tu konieczne dwa warunki: by bank nie stosował polityki sterylizacyjnej i by publiczność chciała oddać do banków proporcjonalną część swoich dochodów, i że wskutek tego ograniczenie się tylko do odpowiedzi, iż nowe depozyty tworzy tylko bank, lub że je tworzy publiczność, opiera się wyłącznie na szczególnym uwzględnieniu jednego z tych dwu warunków, ew. przez nazwanie jednego z nich pierwotnym a drugiego wtórnym, prowadzi więc do rozważań czysto formalnych i nieużytecznych (nawet Keynes, który najpierw twierdzi, że widoczne jest, iż depozyty tworzy system bankowy, zaznacza nieco później, że może on je tworzyć w dwa sposoby).

Następnie przedstawia autor wypadek, w którym można powiedzieć, że nowe depozyty tworzy bank. Dla ułatwienia sobie zadania powołuje się na rozwiązanie kwestii wykazującej wielkie podobieństwa, a mianowicie kwestii tworzenia kapitału przez kredyt, dokonane przez Boehm Bawerka, Wicksella, Misesa, Hahna, Robertsona. Głosi ono, że kredyt powiększa kapitał narodowy przez: 1) przyspieszenie produkcji dóbr w ogóle, a więc także i dóbr kapitałowych, 2) powiększenie wartości dóbr produkcyjnych wskutek zwiększenia popytu na nie; 3) prze-

niesienie pewnej części dóbr o użytku nieustalonym (np. węgiel) spośród dóbr konsumcyjnych do produkeyjnych (w wypadkach 2 i 3 ograniczamy się dlatego tylko do popytu na dobra produkeyjne, ponieważ obecnie kredyt konsumcyjny praktycznie można pominąć).

Tę działalność ułatwiają banki, dając możność każdemu oszczędzania i pożyczania na określonych dla danego społeczeństwa warunkach, jeżeli więc skłonność do konsumcji społeczeństwa się zmniejszy, a skłonność do oszczędzania (tezauryzacje można pominąć) zwiększy, ilość zakupów dóbr konsumcyjnych pomniejszy się i będą one następowały po niższych cenach, zakupy dóbr produkeyjnych się zwiększą, chociażby nawet po cenach wyższych. Będzie to tzw. przez Hahna „kredyt pośredni“ udzielany przez banki.

Ten sam skutek może jednak polityka bankowa wyrzucić bez żadnych zmian psychicznych u publiczności, a to udzielając tzw. przez Hahna „kredytów inflacyjnych“, przy czym trzeba pamiętać, że są one związane z tzw. inflacją tylko wtedy, gdy pierwsze powiększenie rezerw bankowych, skłaniające je do rozszerzenia kredytów, było skutkiem wybicia dodatkowych znaków pieniężnych; gdy zaś (jak z zasady w kraju o walucie złotej) pochodziło ono ze zwiększenia eksportu, prowadzi właśnie do przywrócenia równowagi. Wskutek bowiem powiększenia ilości środków obiegowych ceny wszystkich towarów pójdą w górę, ponieważ jednak z kredytów korzystają tylko producenci, zasoby zaś konsumentów nie uległy zmianie, ilość zakupów dóbr konsumcyjnych zmniejszy się na rzecz produkeyjnych; różnica wobec poprzedniego wypadku będzie leżała tylko w tym, że teraz nominalne ceny zarówno dóbr konsumcyjnych jak i produkeyjnych uległy wyższości. Wicksell nazywa to „przymusowym oszczędzaniem“, lepiej wybranym wydaje się jednak wyrażenie Hahna: „przymusowe ograniczanie konsumcji“, ponieważ proces ten, z wyjątkiem skutków, mało ma wspólnego z oszczędnością.

Zwiększona suma wypłat zmusi publiczność do trzymania w bankach większych depozytów, ponieważ zaś udział społeczeństwa jest tu całkowicie pasywny, można powiedzieć, że w tym, ściśle logicznie określonym znaczeniu „twórcą“ depozytów był bank, cały czas jednak należy pamiętać, że jeżeliby

wzrost depozytów nastąpił tylko wskutek powiększonej skłonności do oszczędzania, twórcą depozytów nie byłby w tym wypadku bank, jakkolwiek i tutaj powiększyłby kredyty.

Autor zaznacza także, że tego, czy zwiększone depozyty powstały w sposób pierwszy, czy drugi, nie można naturalnie rozwiązać przez np. porównanie ilości krótko i długoterminowych papierów bankowych, gdyż ich stosunek zależy raczej od lokalnych zwyczajów, ustaw, oprocentowania, łatwości dysponowania itd., lecz tylko przez rozpatrzenie całego mechanizmu.

*J. J.*

WŁODZIMIERZ HAGEMEJER

## SOME REMARKS ON THE CREATION OF CAPITAL BY THE BANKING SYSTEM

Dr. Kostanecki discusses in the preceding paper two main problems. One of them is the question whether the banking system can create deposits in excess of cash resources and the second one whether credit created in this way means an increase of capital for society as a whole or at least contributes to the creation of capital. These two problems are, to some extent, independent from one another, as the increase of bank money is not the only way to create new means of payment and we ordinarily assume that every increase of the volume of money has similar repercussions in economic life. In this note I intend to consider briefly the second problem raised by Dr. Kostanecki i. e. the consequences of the creation of new money for the creation of new capital.

The author distinguishes two kinds of credit, one being a mere transmission of purchasing power from the hands of the savers to the entrepreneurs and another, the so-called inflationary credit, being granted to the entrepreneurs out of a newly created purchasing power. The banking system is for the first kind of credit only an intermediary but for the second one, the creating agency. Inflationary credit may, according to Dr. Kostanecki's view, affect the creation of capital in a twofold manner. 1. New deposits may be used as money and in this case the well known process of forced saving is likely to take place and the new capital is formed in an inflationary atmosphere of rising prices. 2. "If the new deposits are not being used as net additions to stocks of money for current expenses but are absorbed by the flow of new savings



seeking employment as bank deposits" the process of forming new capital goes on with constant prices. In this case the author supposes that it is the willingness of the public to hold bank deposits that has created the deposits in excess of the cash reserve of the banking system. I have summed up Kostanecki's conclusions at some length in order to remind the reader of the reasoning and conclusions. I have to start my remarks by discussing some of the terms used by the author. Let us first consider the term capital in the sense in which it is employed here. Capital means ordinarily a group of factors of production other than labour and natural resources. The variety of forms of different kinds of produced means of production and the fact that they are to some extent related to each other by their costs of production makes it necessary and possible to measure their amount in terms of some standard of value e. g. money. By capital is meant the value of the stock of wealth other than „land“ engaged in the process of production.

For the present discussion it is important to notice that the aggregate value of the existing stock of wealth is represented in the capital market by the amount of income earning assets such as industrial shares or gilt-edged securities. The amount of these assets may exceed the value of the capital goods because some assets may represent only a fraction of the earnings of a productive agency, and it will be sold and bought at the price of this agency, if some part of the risk of income fluctuations is being transferred to other assets. In such cases we can have a manifold superstructure of assets based upon the amount of the productive resources of society.

Another cause of divergency of the total value of assets and the volume of capital is the fact that every durable source of income may be represented by an asset and we find that the value of land and other natural resources fulfil this condition as well. This is, however, a minor source of troubles, for the amount of natural resources is fairly stable and its value varies only very slightly in the short run; more important is the possibility of issuing assets against a capitalized income of a total or partial monopoly. Such a market position due to

legal or factual restraint of competition presents for its owner a definite capital value but does not mean for the society, as a whole, any source of income. In order to bring the individual and the social point of view more closely together we assume the degree of monopoly to be constant and with these limitations we can measure the variations of social capital as parallel to the variations of the total amount of assets.

The author uses the word "deposit" in two different meanings. Once it means a kind of circulating medium, performing all the functions of money, the second time is it an asset. If new savings are seeking employment as banking deposits, it is because their owners find it advantageous to lend the money saved to the banks for the sake of interest. The individual saver invests his money this way buying an income earning asset; there is no substantial difference between this kind of investment and e. g. buying an industrial share or a gilt-edged security, there is, however, a difference of species between the term deposit in this connotation and deposits denoting means of payment issued by the banks.

The author indicates that deposits may or may not function as means of payment and that they do not perform this function if the public does not use them as money. If it be so then the banking system could not, in such cases, succeed in increasing the amount of circulating media. The increased "incentive to invest" may manifest itself as a demand for bank deposits or e. g. as a demand for industrial shares. In this case the public wishes to invest in this way the sums currently saved and some part of idle cash balances too. If we consider only the effects of investing the sums currently saved we can state that no increase in cash reserves is necessary to finance this increased willingness to invest. New income earning assets will be put into the market and new real investments will probably follow. The course of events will be exactly the same if the public demands bank deposits and the banks purchase industrial securities. The cash reserve kept by the banks against their increased deposits is a fund held in order to insure the banks against the possible changes in the readiness of the public to hold this kind of assets. This reserve which increases the necessary difference between the rate of

interest asked and offered, means for society as a whole a net hoarding which is necessary only if the public does not wish to purchase securities directly. In such a case, however, every increase in the amount of income yielding assets must be accompanied by a proportionate increase in cash reserves. The liquidity preference of the whole system (i. e. the public and the banks taken together) is assumed to be such that it will be ready to invest more only if allowed to increase the amount of idle cash reserves by a proportional fraction of the sum invested.

The proposition that there is a fairly stable relation between the amount invested and the cash reserves may be shown to be true and this peculiar kind of liquidity preference may be found in many cases when the public is holding securities directly but wishes to keep a proportionate liquidity reserve. Other causes which induce people to prefer liquid assets are supposed to be constant.

It is, however, not a sufficient condition to make the banking system unable to expand the issue of circulating media. The cash reserve held by banks against cash deposits has to provide for some payments which are affected to non-customers of the banking system and if the use of bank money is not expanding, there must be some relation between the quantity of bank money and the amount of legal tenders. Another stable relation exists between the amount of deposits held for income motive and the amount of bank money and legal tender kept by the banks in order to provide for the possible change in the readiness of the public to hold this kind of assets. Dr. Kostanecki assumes that the same proportion of legal tender must be kept in both cases which would occur only if every withdrawal of temporary deposit would cause a payment out of this sum to a non-customer of the banking system.

If the banks hold cash in smaller proportion for time deposits than for cash deposits the situation is different and an increased willingness of the public to keep time deposits with banks does not prevent them from increasing the issue of bank money.

Every increase of money brings with a liquidity pre-

ference described by Dr. Kostanecki an increase of the amount of assets the public is willing to hold. It makes no difference whether it is bank money or legal tender and this proposition is true always if the liquidity preference is such that either the public wishes to keep bank deposits for the sake of income (time deposits) or decides to buy other assets directly, but wishes to keep an amount of cash in constant proportion to the sums invested.

The inflationary increase of the bank deposits is a sufficient reason to induce a stronger demand for assets and the creation of new ones is likely to occur, especially when the deposits are regarded as a net addition to the cash reserves of the public.

Dr. Kostanecki regards the prices as the criterion of the inflation of bank money and states that if the banks succeed in expanding the issue of bank money the prices must rise and the creation of new capital can take place only through "forced savings". The thesis implies full employment at the date of the expansion of bank money and if there is some unemployment of resources the increase in investment is not necessarily connected with a withdrawal of the factors of production from making consumers' goods and both branches of industry may expand and contract simultaneously. The price movement does not in this case reflect any shortage of consumption goods supply but an increased demand for investment goods.

### Streszczenie

*Włodzimierz Hagemeyer: Kilka uwag o tworzeniu kapitału przez banki*

Dr Kostanecki w swej pracy zajmuje się dwoma zagadnieniami. Po pierwsze, czy banki mogą stwarzać depozyty w ilości przewyższającej zapasy kasowe, a po drugie, czy ten kredyt oznacza wzrost kapitału dla społeczeństwa. Drugi problem jest przedmiotem tych uwag.

Zdaniem dra Kostaneckiego tylko kredyt inflacyjny wpływa na tworzenie nowych kapitałów, i to w ten sposób, że 1) nowe



depozyty mogą być użyte jako pieniądź, a wówczas ma miejsce tzw. przymusowe oszczędzanie i nowy kapitał powstaje w inflacyjnej atmosferze wzrastających cen, albo też 2) nowe depozyty zyskują charakter oszczędności, a wtedy proces tworzenia się nowych kapitałów dokonuje się przy niezmiennych cenach.

„Kapitał“ oznacza pewien zespół czynników produkcji, poza pracą i zasobami naturalnymi, mierzony w pieniądzu; jest to wartość zapasu bogactwa (poza ziemią), zajętego w procesie produkcji. Kapitał w tym znaczeniu jest reprezentowany na rynku przez sumę lokat dających dochód, np. akcje lub obligacje. Ich wysokość może przewyższać wartość dóbr kapitałowych, gdyż niektóre z nich przedstawiają tylko część zarobków osiąganych przy produkcji. Dalszą przyczynę rozbieżności stanowi możność emitowania papierów wartościowych wzamian za skapitalizowany dochód przy całkowitym, lub częściowym monopolu. Dla monopolisty tego rodzaju sytuacja rynkowa przedstawia określoną wartość kapitałową, lecz dla społeczeństwa nie oznacza ona odrębnego źródła dochodu.

Dr K. używa wyrażenia „depozyt“ raz w znaczeniu środka obiegowego, innym razem w znaczeniu wkładu bankowego. Nie ma istotnej różnicy między inwestycjami dokonywanymi przez samego oszczędzającego, a np. kupnem akcji lub obligacji, jest jednak różnica między depozytem w tym znaczeniu, a depozytem, który oznacza środki płatnicze emitowane przez bank. Według dra K. depozyty nie mogą funkcjonować jako środki obiegowe, jeżeli publiczność nie używa ich jako pieniądza. Z tego wynikałoby, że w tym wypadku banki nie mogą powiększyć środków obiegowych. Wzrost rezerw kasowych nie jest konieczny dla sfinansowania zwiększonej tendencji do inwestowania. Zwiększona bowiem tendencja do inwestycji może się objawić jako popyt na akcje; jeśli zaś wzrośnie popyt na depozyty bankowe, to banki mogą nabywać akcje. Rezerwa kasowa w bankach oznacza dla społeczeństwa tezauryzację, konieczną tylko o tyle, o ile publiczność nie chce kupować wprost papierów wartościowych. W tym wypadku *liquidity preference* całego systemu jest tego rodzaju, że inwestycje mogą rosnać tylko wówczas, gdy suma rezerw kasowych odpowiednio wzrośnie. Rezerwy kasowe służą do skutecznego wypłat na

rzecz osób, nie będących klientami danego banku i jeśli koło klientów nie ulega rozszerzeniu, musi istnieć pewien stosunek między ilością bankowych surogatów pieniądza a ilością prawnych środków płatniczych. Poza tym istnieje stały stosunek między sumą depozytów a sumą bankowych surogatów pieniądza i prawnych środków płatniczych, trzymanych przez banki na wypadek wycofywania depozytów przez publiczność. Dr Kostanecki przyjmuje, że w obu wypadkach prawne środki płatnicze muszą być trzymane w tej samej proporcji, co zaśłoby tylko wówczas, gdyby każde wycofanie depozytu powodowało wypłatę tej sumy przez bank. W razie wzrostu skłonności do trzymania depozytów terminowych, banki mogą zwiększyć emisję banknotów.

Dr Kostanecki uważa ceny za kryterium inflacji surogatów pieniądza i twierdzi, że jeśli banki powiększą emisję, nastąpi wzrost cen, a tworzenie nowego kapitału odbywa się tylko drogą „przymusowej oszczędności“. Ta teza milcząco przyjmuje pełne zatrudnienie w chwili emisji nowych surogatów pieniądza. Jeśli jednak istnieją niezatrudnione czynniki produkcji, to wzrostowi inwestycji nie towarzyszy wycofywanie czynników produkcji z przemysłów wytwarzających dobra konsumcyjne, wytwórczość dóbr produkcyjnych i dóbr konsumcyjnych może się rozwijać równolegle, a ruch cen nie dowodzi w tym wypadku spadku podaży dóbr konsumcyjnych, lecz zwiększenia popytu na dobra inwestycyjne. B. G.

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ADAM HEYDEL

## A NOTE ON THE POLITICAL EFFICIENCY OF THE CONTROL OF INTERNATIONAL TRADE

1. Freetrade is obviously in harmony both with the economic interests of mankind as a whole, as well as with those of separate nations. It might be also in harmony with the political interests of the individual nations, provided that it never became interrupted. This condition, however, is never fulfilled and therefore freetrade may be in opposition to the political interests of the nations.

A highly industrialized country requires a well developed agriculture at home for the case of war and of the cutting off of its supply of food coming from abroad. An agricultural country must for the same reasons develop some branches of industry indispensable to national defence. This means economic losses for each of them, but neither can freetrade be adopted without any costs whatsoever because of political reasons. Great Britain was able to adopt it at the condition of "Ruling the waves". A part of the expenses for the British navy constitutes the price paid by that country in former times for freetrade.

Some method of Trade Control must be adopted if one wants to take into account the "raison d'état".

2. All these statements might be called common-places. But not all consequences are drawn from them. I propose to analyze the theoretical foundation of the methods of control, which should be adopted from the point of view of the political interests of separate nations.

The following aims of Trade Control are to be discussed from this point of view:

a) the problem of a change in the structure of home-production, so as to develop the production of some needed commodities.

b) the problem of preserving some branches of production at a time when a disadvantageous change in their rentability occurred caused by foreign competition.

c) the problem of how to respond properly to the changes of trade policy of other countries.

3. The first of these problems has an obvious political importance. The method of reaching this aim which is generally adopted is very simple and consists in limiting foreign competition by means of tariff duties, contingents, or prohibition of imports. These means are mostly sufficient in practice, but they have disadvantageous effects on the whole of the home-economy, and in consequence might prove inefficient also for the aim for which they have been adopted.

All these means of control bring about a decrease of the general volume of home-production. They will increase the relative share of the protected branch of production, but it is not certain whether the absolute volume of this industry will grow. It may in fact diminish. A branch of industry which amounts to  $\frac{1}{3}$  of the general production of the country might easily be increased by the adoption of Trade Control so as to amount to 0.4 of the general volume of production, but if the production of the country drops from 100 to 80, the absolute volume of the protected production will amount to 32, while before the adoption of the Trade Control it amounted to 33.3... I must concede that the case of a diminution of the absolute volume of the protected industry is rather improbable. In practice one should, however, take into account the fact, that the general decrease of the production must restrain the desired increase of the protected branch. One should also be aware of the fact that those general losses of wealth are disadvantageous from the political point of view. These reasons are sufficient to give preference to another method, although it is evidently more complicated.

4. The other method does not depend on raising prices of the protected commodity, but on lowering its costs of production and on widening its market. For this purpose it is



enough to lower the prices of other commodities. This does not seem to be easy under freetrade conditions. The only way of reaching this aim would be to pay bounties to importers and producers of these commodities, which sounds rather fantastic. Under conditions of tariff duties payed by the importers of a number of commodities, the situation is much more simple. A lowering of those tariffs should be adopted. This will result in lowering the costs of the protected industry immediately if some productive goods needed to its production like machines, raw materials etc. are imported. It must have the same effect in a more round-about way by the fact of widening the market, even if there is no technical interdependence between the commodities. The same result will be still more evident if we lower the tariffs for goods which are complementary to the protected commodity. The only case it might work in the opposite direction, would be the lowering of tariffs for substitutional goods.

This method may be called complicated. It is not easy to calculate how much of the tariffs for other commodities should be abolished, to give sufficient advantages to the chosen industry. It is at the same time sure that it must bring a general increase of wealth and thus awaken forces working for the development of the protected industry. This should be added to the calculation of the decrease of its costs of production. From this it follows that the method is quite certain in one respect: in contrast to the method of raising tariffs it can never bring about a decrease of the needed branch of production.

5. The preservation of some branches of industry may be of importance from the political point of view even if their rentability is not satisfactory, due to disadvantageous changes in the conditions of the production of the goods caused by foreign competition. The impending change in the structure of the general production may not correspond to the *raison d'état*. It may be also disadvantageous from the social point of view if the process of changes were so rapid that its very speed would bring with it the danger of creating social difficulties and conflicts. In both cases it may be advisable to restrain the process and to retard its results even at the cost

of a diminution of wealth. One must be aware of the fact that it may produce in the future a still more violent catastrophe and therefore the checking should be mild and based on a sliding scale. Trade Control is able to supply the politician with efficient tools for such a policy. As to the methods, there should be made a choice between both methods described above. The method of partly abolishing Trade Control on other commodities seems more efficient in this case. For many reasons it seems even easier to preserve in this way a branch of industry on the existing level of production than to increase it or to stimulate a new one.

6. The problem of proper reactions to changes of foreign trade policy is probably the most actual from the point of view of the *raison d'état*.

The very common type of reacting to the adoption of import restrictions by a foreign country is a retortion in the form of restrictions on commodities exported by that foreign country. This means aims at bringing economic advantages to home-production and, at the same time, at hurting the foreign country.

As to the first of those two aims, the development of a special branch of industry may be obtained in this way, but it seems strange to tend to this aim in consequence of a rather accidental happening. If this aim did not form a part of a general plan of economic policy, achievement will be contradictory to the plan. It will influence disadvantageously those branches of production which were supposed to be protected and developed. Even if the general plan included the protection of this industry, the newly added restrictions will cause the protected branch to develop beyond the supposed limits. The infliction of harm to the foreign country in the same way is easily realized, but it does not consist of exactly what was tended to by this economic policy.

7. Let us discuss the effects of that type of policy on a simple example: Country *A* has introduced some kind of restrictions on the import of commodity  $\beta$ , imported hitherto from Country *B*. These restrictions result in bringing advantages to the producers of  $\beta$  at home at the cost of all other branches of industry, among them also at the cost of the producers of

commodity  $\alpha$ , which is exported to Country  $B$ . In turn Country  $B$  tries to parry the restriction of its exports of  $\beta$ , by restricting imports of commodity  $\alpha$ . As a result of this policy the production of  $\beta$  in the Country  $B$  is harmed a second time. Its rentability must drop again both, because of an increase of its costs of production, and of the narrowed home market. In contrast capitals and labour will be shifted in Country  $B$  to the production of  $\alpha$ . At the same time the production of  $\beta$  in Country  $A$  is furthered once more by the restriction of the export of  $\alpha$  from this country. This makes the return of the former exchange improbable even if the tariffs were to be lowered in the future. But even if this probability were not to be taken into account, the results seem to be contradictory to any reasonably conceived plan of Trade Control on the part of each of those countries.

8. The plan of the economic policy of Country  $A$  included the improvement of the conditions of the producers of commodity  $\beta$  so as to increase its relative share in the general volume of production. Let us take the figures adopted in the example above (p. 38). The production of commodity  $\beta$  which amounts to 33.3...% of the general volume of the production of  $A$  is to be raised to 40% of the whole production. This is to be obtained by the restriction of the import of this commodity. If the exporting Country  $B$  restricts imports of  $\alpha$  from Country  $A$ , it will further the production of  $\beta$  in Country  $A$  beyond these lines; it will also cause all the other branches of industry in  $A$  to decrease (especially the production of  $\alpha$ ), but at the same time it causes all home industries in Country  $B$  to decrease the most immediately the production of  $\beta$  with the only exception of the industry producing the commodity  $\alpha$ .

The harm done to the economy of  $A$  lies above all in the fact, that the production of  $\beta$  may now increase to 50%, instead of reaching 40% of the general volume of production of this country, but the harm inflicted to the economy of  $B$  is much more evident. The advantageous production of  $\beta$  is limited, consumers get  $\alpha$  at prices higher even than those at which they would be able to get them after the restriction of the exchange of  $\beta$ .

9. These results are undesirable for the Country  $B$ ; which

then should be the proper way of answering the policy of *A* which would enable *B* to avoid these facts? If the economic policy of *B* does not lose sight of its real aims it should parry the restriction of the import of  $\beta$  to Country *A* by the lowering of tariffs for the import of  $\alpha$ . This will improve the situation of the production of  $\beta$ , which has lost its market in *A*, and will increase the whole of production in *B*. Two different aims are reached in this way: 1) the relative shares of the production which seemed to be the best to the leaders of the economic policy of the country, are restored in a certain degree. 2) the economy of the country regained some of the advantages, lost by the restriction of its exports.

The liberalisation of the imports of  $\alpha$  to Country *B* changes the situation in *A*. It limits the advantageous effects of the restriction of imports of  $\beta$ . Country *A* has a choice between further restrictions (higher tariffs) to the import of commodity  $\beta$  or lowering tariff duties imposed on imports of all other commodities. Both would improve the situation of the producers of commodity  $\beta$ . In the first case Country *B* may again lower the tariff for the imported commodity  $\alpha$ , in the second case countries trading with *A* may and should lower tariffs on all commodities imported from *A*. The general adoption of a rational Trade Control, would then lead to an approach to free trade, and this way it would immobilise the trade policy conceived according to political interests of separate nations. Its final result would be in fact freetrade without any restrictions whatsoever.

10. Does this mean that the method of lowering other tariffs in view of a return to the hitherto existing situation is inferior from the point of view of the *raison d'état* to the method of answering a tariff, by raising another one? No. Just the opposite. The method of "reprisals" is absolutely inefficient even if it does not meet any more reactions on the part of other countries. At the same time it impoverishes the country which adopts it. This is not indifferent also from the political point of view<sup>1</sup>.

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<sup>1</sup> It must be, however, admitted that reprisals in the form of restriction might be used as a mean of pressure which should bring forth



In contrast the liberalisation of the trade adopted as an answer to the introduction of tariffs by the partner-country brings about evident political and economic advantages if it does not evoke any reaction on the part of the foreign countries.

Its political efficiency will be the stronger, the more erroneous the policy of the foreign countries. If Chancellor Axel Oxenstjerna was right in his opinion about the little wisdom which governs nations, the adoption of this method promises important advantages.

### Streszczenie

*Adam Heydel: O politycznej skuteczności reglamentacji handlu zagranicznego*

1. Wolny handel harmonizuje z interesami ekonomicznymi zarówno całej ludzkości jak i poszczególnych narodów. Wolny handel byłby zgodny także i z politycznymi interesami narodu, gdyby nigdy nie ulegał przerwom.

2. Ten warunek nie spełnia się w rzeczywistości. Pewna interwencja w dziedzinę handlu międzynarodowego jest zatem konieczna ze względu na obronę narodową. Stosowana metoda interwencji nie wydaje się najskuteczniejszą politycznie i można ją zastąpić inną. Dla oceny tych metod należy rozważyć następujące problemy:

a) problem wprowadzania zmian w strukturze produkcji krajowej celem rozwinięcia pewnych gałęzi produkcji.

b) problem ochrony pewnych gałęzi produkcji, gdy ich rentowność zmniejszyla się wskutek konkurencji zagranicznej.

c) problem właściwego reagowania na zmiany polityki handlowej innych krajów.

3. Pierwszy z tych celów osiąga się zwykle drogą ograniczenia konkurencji zagranicznej za pomocą taryf celnych, kontyngentów lub zakazów importu. Te środki są najczęściej

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a lowering of the tariff introduced by the foreign country under two conditions: a) the foreign country has a rational trade policy. b) the restriction introduced as retortion remains unaltered.

w praktyce wystarczające, ale niekorzystne dla całości gospodarki, powodują bowiem zawsze zmniejszenie ogólnego rozmiaru produkcji krajowej. Choćby więc te środki zwiększyły względny udział protegowanego przemysłu w ogólnej produkcji nie jest jeszcze pewnym, czy produkcja tego przemysłu bezwzględnie wzrośnie. Może ona nawet się zmniejszyć, co jest wprawdzie mało prawdopodobne, ale — jako konsekwencja ogólnego spadku produkcji — możliwe.

4. Wynikający stąd ubytek bogactwa jest wystarczającym powodem, aby wybrać drugą metodę, która polega nie na podwyższaniu ceny protegowanego towaru, ale na obniżce jego kosztów produkcji i rozszerzaniu jego rynków zbytu drogą obniżenia ceny innych towarów. W systemie wolnohandlowym możnaby to osiągnąć tylko przez premiowanie importu i produkcji tych towarów, natomiast przy systemie ochrony celnej wystarczy obniżenie cel na inne towary, co spowoduje spadek kosztów produkcji protegowanej, który wystąpi tym wyraźniej, im większa jest zależność techniczna lub komplementarność między towarem protegowanym a importowanymi, na które cła obniżono.

Trudność tej metody sprowadza się do problemu, o ile obniżyć taryfy celne. Jej wyższość nad stosowaną polega na tym, że nie może ona nigdy doprowadzić do spadku produkcji protegowanej, lecz przeciwnie, prowadzi do jej zwiększenia i ogólnego przyrostu bogactwa.

5. Ochrona pewnych gałęzi produkcji, których rentowność się zmniejszyła wskutek zmian w warunkach produkcji, spowodowanych konkurencją zagraniczną, może mieć znaczenie z politycznego i socjalnego punktu widzenia, choćby miała prowadzić do ubytku bogactwa. Także i w tym wypadku metoda częściowego zniesienia regulacji importu innych (nie protegowanych) towarów wydaje się bardziej skuteczną.

6. Problem właściwego reagowania na zmiany obcej polityki handlowej jest najbardziej aktualny. Powszechnie reaguje się na ograniczenie importu przez inne państwo za pomocą ograniczenia importu z tego państwa. Może to spowodować rozwój pewnej gałęzi produkcji, jeżeli jednak ten rozwój nie mieścił się w ogólnym planie polityki gospodarczej, może on wpłynąć niekorzystnie na całość gospodarki.

7. 8. Jeżeli kraj  $A$  ograniczy import towaru  $\beta$  z kraju  $B$ , a kraj  $B$  odpowie na to ograniczeniem importu towaru  $\alpha$  z kraju  $A$  to skutek tej polityki okaże się dla  $B$  niekorzystny i przejawia się w pogorszeniu warunków produkcji wszystkich towarów z wyjątkiem  $\alpha$ , w pierwszym zaś rzędzie ucierpi produkcja  $\beta$ , która ulegnie podwójnemu zmniejszeniu rentowności z powodu: 1) skurczenia się rynku i 2) wzrostu kosztów produkcji.

9. Właściwą reakcją kraju  $B$  na ograniczenie jego eksportu do kraju  $A$  jest obniżenie taryf celnych na towary importowane z kraju  $A$ , co polepszy warunki produkcji towaru eksportowanego i doprowadzi do odzyskania utraconych chwilowo korzyści. Ta polityka kraju  $B$  zmniejsza efekt osiągnięty w kraju  $A$  przez ograniczenie importu z  $B$  i zmusza ten kraj albo do dalszych ograniczeń tego importu, albo do liberalizacji handlu innych (nie protegowanych) towarów. Na to znów państwa prowadzące handel z krajem  $A$  winny odpowiedzieć dalszą liberalizacją importu, co w ostatecznej konsekwencji prowadziłoby do zupełnej wolności handlu zagranicznego.

10. Porównawszy te dwie metody, widzimy, że metoda represji jest 1) nieskuteczna politycznie i 2) prowadzi do zubożenia stosującego ją kraju, co z politycznego punktu widzenia nie jest też obojętne.

Przeciwnie, liberalizacja handlu, jako odpowiedź na wprowadzenie podwyżki cel przez przeciwnika przynosi widoczne gospodarcze i polityczne korzyści.

S. H

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## ABSTRACTS FROM CONTRIBUTIONS TO ECONOMICS PUBLISHED IN POLISH IN THE PERIOD 1935 — 1936

Maria Ferber, *Przyczyny kryzysu rolnego. Towarzystwo Ekonomiczne w Krakowie, (Causes of the agricultural depression). Cracow 1936, 193 pages.*

The author tries to find a basis for the theory of agricultural business cycles as a division of the general theory of business cycles, by the presentation and critical discussion of views on the agricultural crisis and the collecting of descriptive material from literature. The work is composed of four parts: 1) introduction devoted to the problem of the economic separation of agriculture and its progressive connection with the whole of exchange economy, 2) presentation with the help of statistical data of how this economic connection of agriculture with the whole of exchange economy appears in the dependence of agricultural cycles upon the shaping of the relation of agricultural prices to industrial prices; 3) part third gives an analysis of the views on the agricultural crisis and 4) part fourth comprises a criticism of these views and conclusions.

The author is opposed to the views, which consider the phenomena of the agricultural crisis separately from the whole of economic life. Although she stresses the significance of certain peculiar characteristics of agricultural production in relation to other branches of production, as for instance the differences in the appearance of the tendency to the decreasing returns, in the length of period of production, in the elasticity of supply, altogether she points out tendencies towards a stronger and stronger usurpation of agricultural production by the mechanism of exchange economy. The shaping of agricultural



business cycles is more and more distinctly dependent upon the oscillations of the price level and the relation of industrial prices to agricultural prices, since the industrial prices define to a constantly greater degree the amount of the costs of production, while the prices paid for farm products, as a result of the specialization of agricultural economics and the increase of their market inclination, have a constantly greater significance for the agricultural situation.

This process of usurping of agricultural economy by exchange economy has been presented by several of the authors quoted in this paper, as for instance, Gumperz, Studenski; these authors however, are of the opinion that the crisis of agriculture is simply a symptom of these transformations of the structure of farm production. In the opinion of others the crisis is a result of characteristics peculiar to farm production in relation to industry, as for instance a smaller elasticity of supply etc. Therefore the question is, would it not be possible to construct a theory, which would explain in general the development of agricultural cycles, as an influence of the functioning of the mechanism of a capitalistic economy and of the present social system.

Depending upon whether the agricultural crisis is conceived as a completely separate phenomenon, or as a part of the general economic crisis, or as a swerving of the agricultural cycle from the general economic cycle, it is necessary to look for the causes of the agricultural crisis either in separate processes, having to do only with agriculture, as for instance, the oscillations of the harvest, and the like, or in general economic processes, or in the activity of factors creating differences between changes and the relation of the changes of economic elements in agriculture and in other fields of economic life.

Views on the agricultural crisis may be divided in general into three groups, depending on whether the causes for the crisis are to be sought on the side of supply, or on the side of demand of agricultural products, or whether they are to be sought in money factors. The views of the individual authors cannot however be classed in their entirety with any one of these three groups, since in general they consider the agri-

cultural crisis a result of the activity of several factors belonging to different groups. The views of groups I and II are interested in the shaping of the relation of the agricultural supply to demand and conceive the agricultural crisis as a result of the disturbance of the equilibrium between these two quantities, while the theories of group III see only the influence of the oscillations of the price level brought about by monetary factors, on the agricultural situation.

In the investigations of the changes of the elements of supply and demand for agricultural products, as in the circulation of credit and money we may differentiate the following tendencies: 1) some seek the causes of the agricultural crisis in changes occurring in the economic structure of agriculture, resulting from the development of the economic life, which draws agricultural production within the limits of the capitalistic economic system, as well into the phases of its cycle oscillations, or they stress the significance of evolving changes in vital statistics, in the manner and standard of living, and the like; 2) others, not accepting continuity in the development of economic life as a basis for their arguments, ascribe the occurrence of these changes in the relations of equilibrium, to the activity of exogenous, incidental factors, as for instance the harvest, the weather, war, agricultural policy, cartelization, import and export duties, psychological changes, the pioneering spirit, and above all the adaptation of new inventions and methods in agricultural production; 3) finally to direction III belong those views, which accept the agricultural crisis as a symptom of cyclical, recurrent oscillations of economic life.

In the views of group I, which looks for the causes of the agricultural crisis on the side of the supply, those have been differentiated which stress the violent transformations in the manner and methods of agricultural production in the middle of the XIX century and in recent times just before the crisis, — these which consider as a cause of the crisis peculiar characteristics of agricultural production as for instance, a small elasticity of supply, and views which call the attention to the great influence of political factors on the disturbance of the equilibrium between supply and demand of agricultural products, and finally those pointing out factors increasing the

supply of agricultural products and lowering the price independently of changes in the amount of production.

The importance of the industrial revolution in agriculture, appearing in such phenomena, as a great increase in the efficiency of agricultural work, the development of the organization of agricultural production on the model of industrial production, concentration, the development of great agricultural capitalistic enterprises, social changes, the moving of farmers from the land, and the like, were stressed by many authors, especially those investigating the course of this process in the U. S. A. and other over-sea countries. Differences occur however concerning the construction of the causal connection between these events and the agricultural crisis with individual authors. Some are satisfied with the statement, that the events must be a cause of the increase of agricultural supply, and thus of lowering of prices, others as for instance Gumperz stress above all not the increase of production but the revolutionary significance itself of a strong increase of the efficiency of work and of the decrease of the costs of production, such as has occurred in agriculture. From a comparison of the views of the authors of this group there arises the problem whether the agricultural crisis is a result of the disturbance of the activity of the law of decreasing returns from the land and the increase of the efficiency of agricultural production from an area unit, as a result of the above perfections, of a symptom only of a temporary elimination of the activity of that law by the extensive development of agricultural production in new areas, especially in over-sea countries. In the first group above all the views of Studenski and Sering are in opposition with each other. Studenski and Gumperz explain the changes in the purchasing power of agricultural products, or the differences in agricultural and industrial prices by differences in the development of productive power in agriculture and industry. So, for instance, the present wave of technical changes in production transfers agriculture into the degree of production of industry, disturbs the activity of the law of decreasing returns from the land, bringing about a difference between the prices in agriculture and industry to the disadvantage of agriculture. Sering bases his view on the law of

decreasing returns from the land. Only the extension of tillage surface as in America, was able, by the temporary elimination of the influence of the law of decreasing returns from the land, to call forth a decrease of the purchasing power of agricultural products. For the rule is a constant growth of the purchasing power of agricultural products, since otherwise, as a result of the activity of the law of decreasing returns, the development of agriculture would be impossible.

Among factors causing the so-called inelasticity of agricultural supply, which brings about its inadequate adaptation to the fall of prices, and thus beginning a crisis in agriculture, most often is stressed the cutting up of agricultural production, the insufficient knowledge on the part of the farmers of the market situation, the difficulty of a suitable organization of the production and sale of agricultural products, the small significance of the money factor in the costs of production, the peculiar character of the agricultural profession, which is rather a manner of living, and the like. Among political factors we often find in the first place the influence of the world war on the development of agriculture in over-seas countries, the protective policy for agriculture, the tendency to self-sufficiency, import limitations (Timoshenko, Ezekiel and others give the respective figures). Great significance for the influence of the quantity of production on the price level is possessed by the manner of selling farm products, for instance, the collecting of supplies which later suddenly appear on the market and call forth a depression, and above all the influence, stressed by Stefan Schmidt, brought to bear on agricultural prices by farmers of Eastern Europe, who at the cost of lowering their standard of life, increase, under the influence of financial burdens, the amount of sales of agricultural products, from their, to a great extent, self-sufficient farms.

The theories of the group II concerned with the demand for agricultural products, are divided into two basic sub-groups, namely, into views concerned with the financial side of demand for agricultural products and those investigating the influence of changes in the sum of the needs of the population on changes in the social demand for agricultural products.



Here is examined the problem of the wrong division of income and capital in the arising of the agricultural crisis. From the theory of Sering which is considered one representing the group of the theories of demand, it is evident that he considers as the chief cause of the crisis, the wrong division of capital between particular countries, caused by political factors, war, peace treaties, reparation debts etc. The purchasing power of the marginal consumer, in this case, the working class of Germany, decides the price level. Ruined by war and in debt to the U. S. A., Europe is not in a condition to pay for the expensive American products, produced by the fast developing with the help of saved capital, American agriculture. To this was added the activity of the industrial crisis, unemployment, tariffs. The influence of the industrial crisis, unemployment and changes in the incomes of particular classes of society, this is really the problem of the influence of the division of social income among the various classes of society on the shaping of prices and agricultural cycles. This problem was discussed by Kirk in his work entitled: „Agriculture and the Trade Cycle“. For the elasticity of demand is different in relation to agricultural and industrial goods, in the reaction to the changes of prices and to the changes of income, in the various classes of society. Thus the difference in the increase, or decrease of income in various classes must appear in the shaping of the social demand for various goods. If, for instance, the incomes of the working class, comprising the chief market of sale for agricultural products, do not increase in correspondence to the incomes of the whole society, or if they decrease greatly, the demand for goods of the greatest need, especially for food-stuffs, increases comparatively less, or falls more than we should judge from the oscillations of the whole social income. Because of the difference in the elasticity in the demand of the poorer and richer classes, great significance is possessed by the division of wealth between the various countries, for the development of agricultural cycles. The same decrease of incomes is manifested in a comparatively a much smaller decrease of demand for foodstuffs in England than for instance in Poland. Prof. Schmidt has stressed, as represented above, the influence of a comparatively large elasticity of demand for agricultural

products of Polish farmers and others in Eastern Europe, of their inclination to the limitation of the most necessary consumption, on the increase of the amount of products sold by them and on the fall in prices. This doubtless can be applied also to city dwellers. The consumption which for the English labourer is quite inelastic, for the Polish labourer may be still limited. The same decrease in income, which for the majority of the English population means only giving up more luxurious expenditures, for the population of many other countries means hunger and poverty. Thus, when above all poorer countries are affected by a decrease in income, the demand, for agricultural products, for food-stuffs and clothing falls in particular. The prices of agricultural products in Poland fell from 89.5 in 1929 to 35.8 in 1935, with the level in 1928 at 100. The improvement in agricultural prices and their relation to industrial prices was generally somewhat late in the agricultural countries of Eastern Europe in relation to other countries. In Poland, Roumania and Hungary agricultural prices continued to fall in 1933, when in overseas countries they began to increase. The pure income i. e. the rest of the gross income after subtracting investment, remaining for the paying of capital invested in farms, both owned and rented, in Poland fell from 100 in 1927—8 to 7.2 in 1931—2 for one acre. The author considers the problem whether, independently changes in the social purchasing power available for agricultural products, there did not arise certain changes in the sum of the needs of the society, in the field of agricultural products. There arises here the question of the influence of changes in vital statistics on the agricultural situation. Some authors as e. g. Ezekiel, Baker in his "Proceedings of the Second and of the Third Conference of Agricultural Economics", stress the significance of changes in the amount of population, especially of the limitation of the growth of population, which has been in evidence in recent years, for the consumption of agricultural products because of the small changeability of the consumption of these products in the individual, and also because of the compensation of changes in consumption, so that as a result the whole consumption of agricultural products changes respectively with changes in the number of population. From

the papers of Kirk and Timoshenko the problem is also evident of the sharpening of the disproportion between the growth of agricultural production and the growth in population because of the geographical division of the expansion of the agricultural production and the growth of population viz. as a result of the especially speedy growth of population in countries with a strong expansion of agricultural production and a limitation of that growth in importing countries in Western and Northern Europe.

Kirk, Ezekiel, Timoshenko call attention to the fact that in relation to the equilibrium between agricultural production and demand there are still other variable quantities on the side of demand, i. e., above all the standard and type of living. They are of the opinion that of great significance to the insufficient development of demand for agricultural products were also changes in human consumption, such as in recent years have occurred, namely changes from agricultural goods to industrial goods and their services, the limitation of the consumption of food-stuffs of agricultural origin, especially of grains, necessary for the development of physical strength, with advantage to more expensive food-stuffs in whose manufacture agricultural work plays a comparatively smaller role, and to goods satisfying needs of the second order. Also the production of substitute industrial goods is taking the place of agricultural production in other fields of economic life outside of the production of food-stuffs, as for instance, if it is a question of the production of textiles, timber and the like. This development takes place constantly in this direction as the standard of living is raised, as physical labour is supplanted by mental labour, as industrial production is developed, fashions and customs change, hygiene progresses, and so forth. Not only the absolute decrease of the consumption of agricultural goods is stressed, but above all the decrease of that consumption, especially of grains, in relation to the consumption of other goods. For as prosperity increases, the elasticity of the demand for agricultural products decreases, together with the possibilities of increasing that consumption in reaction to the increase in income, or the fall in prices. The increase of the

social purchasing power is directed thus to other kinds of demand.

The author discusses further the monetary theories of the agricultural crisis. They investigate the influence of the shaping of money and credit circulation on the agricultural situation. They are not in general interested in the question of the equilibrium of the supply and demand of agricultural products, they dispense with the hypothesis of agricultural over-production, as causes of the agricultural crisis, because of the fact that in recent times there occurred a fall of practically all prices. The factor disturbing the equilibrium is the good which mediates in this exchange, that is, money. These views are based on the statement that the increase in the amount of money and credit and the increase of the general level of prices were always connected with the development of agriculture, — deflation and drop of prices with crisis. Some point to the insufficient increase of the world's supply of gold in relation to the development of agricultural production. Others are of the opinion that it is not the question of the amount of gold, but of its distribution and of using its supply for the development of money and credit circulation, as a result of which the massing of gold must be disadvantageous, as e. g. in the banks of France and the U. S. A., which do not permit the increase in the gold supply to be evidenced in the respective expansion of credit. Prof. Schmidt stresses the necessity of a stronger development of the circulation of money, as the capitalistic system of economy in agricultural production and a more market inclination of agricultural production develops. Stefan Schmidt also calls attention to the influence of international debts on agricultural prices in the gold standard system, on the increase in the value of gold and the decrease of the price level, as the result of the international struggle for gold. Timoshenko describes how indebted agricultural countries were forced to strain production and export at low prices in order to balance their debit side of the budget, how at the beginning the expansion of credit, particularly foreign, enabled these countries to mass supplies, and develop production at a time when it was already surplus, constantly increasing the indebtedness of these countries, which in the



year 1929 was to lead to the worse breaking and fall of the prices of export goods of these countries.

Monetary theories pointing out the oscillations of the money and credit circulation and changes in the general price level, as factors decisive in the agricultural situation, are however forced to explain in what way these factors influence the arising of a so-called especially bad economic situation in agriculture in relation to other branches of social economy. Often this worse situation of agriculture is explained by the above peculiar characteristics of agricultural production. The most important factors in strengthening the course of the crisis in agriculture are however beyond a doubt changes in the relationship of the prices to the costs in agriculture, brought about by deflation. For deflation not only lowers the general level of prices but also brings about changes in the relations of individual values, as a result of differences in the degree of their elasticity. Thus, for instance, the inelasticity of the amount of taxes, rents, percentage on debts causes an increase of the burdening of agriculture during the fall of prices, which has been stressed by some authors. Warren however is of the opinion that of greater significance than the increase of these burdens are the unparallelisms in the fall of prices obtained by the producer and retail prices, the prices of raw materials and ready made goods, of wages, retail prices and living costs in the oscillations of the general price level. For wages and the costs of distribution, dependent on the height of wages, are more inelastic than the prices of raw material and the wholesale prices. As a result of this with the fall of the price level the difference between the prices of raw materials and the finished goods is increased, as between wholesale prices and retail prices, between prices paid for agricultural products by consumers and prices received for those products by the farmers. This must lead to the transferring of incomes from the country to the cities, since the costs of distribution comprise for the most part the income of the city population, and thus to the agricultural depression.

In beginning a criticism of the above presented views attention was above all drawn to the fact that they are based very often on the comparison of arbitrarily selected statistical

data, that is that concerned with changes in the amount of production, the increase of mechanization and the like, for the purpose of proving the theses accepted a priori. Without a previous fixing of the conception of agricultural crisis itself, the investigation of its causes was often begun. It cannot lead to certain conclusions as to the causes of the crisis, if eliminating without theoretical or statistical justification the changes of certain economic elements which influence the whole of the agricultural situation, one examines only the changes of one or even several others of these elements. We cannot, for instance, from the statement alone of the strong development of production, or the limitation of the growth of population conclude that just that increase or limitation was the cause of the depression, since we do not know if at the same time the demand was changed, or if the consumption per head did not increase, and the like, and if the changes of the relation of these elements to each other justify satisfactorily the swerving of the agricultural situation from the general economic cycle to the disadvantage of agriculture.

Even those theories which take into consideration the connection of the changes of agricultural cycles with the development of the whole of economic life, compare for the most part changes of such elements whose relation is not decisive for the shaping of the agricultural cycle. As for instance, is evident from the views of Gumperz and especially of Studensky, they are of the opinion that the relation of the development of agricultural production to industrial production may only decide the level of agricultural and industrial prices. Since the level of prices may only be decided by the relation of supply and demand, it follows that they make the shaping of the demand for agricultural prices dependent upon the amount of industrial production. There come into play here still other factors, such as changes in human needs with relation to particular agricultural or industrial goods, differences in the elasticity of demand, which may completely change the result of calculations based on the above data. Gumperz stresses the significance of the increase of efficiency of agricultural work and the decrease of the costs of productions in the arising of crisis. It is not however clear in what way the

mechanization of production itself, lowering the costs, might lower the prices, if it were not connected with the growth of the efficiency of production of a unit of area and with the increase of the whole agricultural supply. Unless the decrease of costs which increases the rate of gains in agriculture causes an appearance of capital from other divisions of production, and the expansion of agricultural production. There arises here the problem as to whether the lowering of the costs of production, brought about by the increase in efficiency of agricultural work can be considered as an important occurrence, which changes permanently the whole structure of agricultural production and its relation to industrial production, or whether the amount of the costs of agricultural production does not really depend on the shaping of the relations of the demand and supply of various goods, whose prices are part of those costs, and in particular also on industrial work, which in modern mechanized agricultural production is playing a constantly greater role.

In connection with the view of Sering, contrasting agricultural production as production subject to the law of diminishing returns from the soil, with industrial production whose "development in principle is not limited by anything" and who states that in view of this a condition of development of agricultural production is a steady lowering of industrial prices which are comprised in the costs of agricultural production and that such a difference in prices to the disadvantage of agricultural prices which has recently occurred in the increase of agricultural production is only possible by the broadening of production into new territories; it was suggested that the tendency to the diminishing of returns is not especially the exclusive property of agricultural production, but appears in all branches of production, with time giving place to the tendency to the increasing of returns, in view of new perfections in the methods of production and the like, which does not exclude in the least the possibility of a stronger appearance of this tendency in agricultural production. Attention was drawn to the fact that the lowering of prices, as a result of the widening of agricultural production into new territories cannot be reconciled with the view of Sering concerning the

activity of the law of diminishing returns in agriculture, so long as in the activity of that law the widening of production onto new less tillable or farther lands would demand just as the intensification of former cultivation, increased costs, and the perfectness of methods of tillage and communication which made possible the widening of cultivation onto lands up till then economically inaccessible, would therefore also take the form of the breaking of the activity of the law of diminishing returns.

If it is a question of the investigation of changes in the field of demand for agricultural products, it would be necessary to conduct the investigation of the changes of all the factors of demand. An investigation of changes only in the purchasing power of the industrial population, according to the view of Sering would be insufficient, since the influence of changes of the purchasing power of this population on the shaping of its demand for agricultural products is dependent upon the distribution of these changes among the various classes of people and countries, upon the difference in the elasticity of demand in relation to the changes of income, as concerns the various goods, and in the various classes of society. Besides this, social demand is influenced by changes in the number of consumers, that is, by vital statistics and changes in the needs of consumers as regards various goods. It might thus occur that the changes of certain of the factors of demand were compensated completely or at least in part by changes in other factors, and so before beginning investigations on the influence of any of those factors on the appearance of the crisis, it would be necessary first to find out if we may overlook the changes of other factors. Two of these factors, namely, the limitation of the growth of population, and changes in the needs of the population are in general changes, which are so slow and gradual that it would be difficult to explain by them the occurrence of such a violent crisis.

Monetary theories, as has been suggested, investigate the influence of the money and credit processes through changes in the general level of prices on the oscillations of the agricultural cycles. Though it is quite possible to explain by deflation the lowering of the general level of prices and the ge-



neral economic depression, it would be difficult to explain in this way the swerving of the economic situation of one branch of production, e. g. agricultural production from the situation of other branches, and especially, e. g. the earlier dropping of agricultural prices than of industrial prices. It is true that authors of monetary theories, as for instance Warren, sometimes stress the difference in the movements of the various prices during inflation, the inelasticity of the costs of production (taxes, percentage), but these factors of course touch all branches of production to a greater or lesser degree, and the significance of the elasticity of costs for the rentability of a given branch of production may be evaluated only in comparison with the degree of elasticity of the price of its products. On the other hand, these authors are not concerned as a rule with the difference in the changes of agricultural and industrial prices and Warren even denies its existence during the last crisis. From the papers here presented, it is evident that their authors do not realize the fact, that in investigating the influence of the changes of the price level as a quantity independent of agricultural production alone, but exclusively dependent on monetary factors influencing agricultural situation, in reality investigate the influence of the changes of the purchasing power of the whole community. To these views refers then also the above raised reproach that for the investigation of the causes of the agricultural depression it is not enough to acquaint oneself with the changes in the purchasing power as a whole, but it is necessary to examine changes of that part of the general purchasing power of the society, which is destined for agricultural products and which by no means needs change proportionally to the whole purchasing power. Therefore it would be possible to class the monetary theories presented here with the group of theories of demand, with the reservation that they investigate only the influence of the changes of one factor of demand and that is the purchasing power. Monetary theories however, also stress the inelasticity of costs and of agricultural supply. Thus, of course, if other quantities remain the same, with a fall of the social purchasing power, and as a result of the whole social demand, the economic situation of various branches of eco-

conomic life, in this case, of agriculture, would depend on the elasticity of demand for the given goods and upon the elasticity of supply.

However, such a conception of the influence of oscillations in money and credit circulation on the agricultural situation shows a complete overlooking of the question of the influence which these oscillations have on the agricultural situation through changes in the distribution of the purchasing power of the society between production and consumption, by changes in the relation in the invested income and savings. They did not take into consideration the influence of credit expansion on the development of agricultural production, or the facilitation of that development. It would be necessary to examine the role which oscillations in the size of the purchasing power, (without consideration whether they are original or subsequent, in relation to changes of other factors as a result of its unequal influx to the various divisions of production, or to the classes of population, to production and consumption) played in the appearance of changes in the capital structure of production and in the structure of demand, in the arising of a disproportion between the production power and the consuming power of the people.

The most important views on the agricultural crisis investigated the influence of four elemental factors on the appearance of the agricultural crisis, namely of the factor of technical progress and perfection of the methods of production, of the factor of the oscillations of the money and credit circulation, of the factor of the changes in the size of the needs of the society with reference to agricultural products, and finally of the political factor. The activity of these factors is evidenced in the amount of agricultural supply by the bringing about of changes in the amount of tillable surface, and the efficiency of production, as well as in changes of demand for agricultural products, which decides the shaping of the relation between these two quantities, and at the same time the oscillations of the prices of agricultural products. Each of these factors possesses a different character, and therefore they should occupy very different places in the classification of the causes bringing about the agricultural crisis. The political

factor, that means tariff limitations, wars, treaties, international debts, and the like. It is a cause extraneous to the economic system, arising in a sphere not directly dependent, although perhaps indirectly connected with economic processes, and acting in relation to them more or less accidentally. Therefore, it would be difficult to explain on the basis of the activity of this factor, certain rules in the shaping of the agricultural cycle and its relation to the general economic business cycle. Money and credit circulation is undoubtedly that element of economic life, which most plainly points out the tendency to the creation of cyclic, automatic oscillations, which start the movement of the quantities of economic life, without the interference of outside factors. Therefore also the monetary factor serves first of all for the construction of those theories of agricultural crisis which attempt to conceive it as a cyclic phenomenon, as a symptom of the cyclic undulations of economic life. The factor of technical progress possesses a different character from the credit and money factor, it brings about changes in the structure of economic life, in particular of agriculture, brings it to another degree of development, calling forth long lasting periods of adaptation. It is an extraneous factor in relation to economic processes, whose activity in relation to these processes is looked upon in general as accidental. If from this point of view we look at the activity of this factor, it would be difficult to justify the regular repetition of that activity every little while, and explain certain regularities in the oscillations of economic quantities, it could only explain the appearance of agricultural crisis as symptoms of the transformation of the structure of agricultural production in important moments. In opposition however to the manner of examining the activity of the political factor which is considered perfectly accidental in relation to economic life, there appear views, seeking a certain regularity in the transformations of the structure of economic life to which is subject also the development of agricultural production. We may also show the existence of the connection between the economic phenomena and technical progress and perfection of the methods of production and prove that between the course of one and the other processes there occurs a connection of mutual

interdependence, and so we may attempt to grasp these phenomena in the rules of development. Changes of the needs of society as to agricultural products which are influenced by changes in the amount of consumers and the intensity of the needs of the consumers as concerns agricultural goods, this is also a factor, whose activity cannot show cyclic, rhythmic oscillations. The activity of this factor does not bring about, as the activity of the factor of technical process, sudden transformations of the structure of economic life, but rather its slow changes, running however steadily in the same direction with only temporary swerving. Thus, this activity cannot be considered as a cause of periodical swervings in economic life, in this case in agriculture, from equilibrium, but can only change the conditions of the appearance of these swervings, or facilitate that appearance.

Independently however of the fact, to what degree the activity of the factor of technical progress and perfection in agricultural production, and of changes in the needs of society concerning agricultural products, may aid in the explanation of oscillations of the agricultural cycle, the investigation of the activity of these factors has however an important significance in the explanation of the question of the relation of the development of agricultural production to the development of the needs of humanity in relation to agricultural products. It is a question here of explaining the question whether the agricultural process, based on the strong breaking of the purchasing power of agricultural products is not in spite of its unpleasant, economically, characteristics, a phenomenon of the breaking down of laws, which according to the views of Malthus would lead to the misfortune and poverty of humanity. It is the problem of the stress, or the breaking of the stress of humanity on food-stuffs, comprising three problems: the problem of the expansion of agricultural production, the problem of the fall of the rate of growth of population, and the problem of the limiting of the consumption of agricultural products per person. Concerning the latter problem, in spite of certain changes in the consumption of particular agricultural products, which take place together with the change in the type of living, it is certain, that these changes would not be so strong as to



change basically the significance of the development of agricultural production for the question of the feeding of the population. All these changes take place in narrow limits defined by natural laws. The above limitations are compensated by an increase in the consumption of other agricultural goods and by an increase in the consumption of grain and other agricultural products as the standard of living of the poorer classes of the population is raised, but in the present standard of living that last factor has still a greater significance than the fall of consumption in wealthier groups. The question of the substitution of agricultural products by industrial ones, has not as concerns food-products, both prepared, and raw-materials, at present any significance practically for the production of food-stuffs.

Concerning the relation of agricultural supply to the amount of the population three variables are decisive: the territory and efficiency of production and the rate of growth of population. It would be a question of investigating, whether in any of these quantities there had occurred any basic changes, whether the tendencies at present directing the development of agricultural production and population lead to an insufficiency or to a surplus of food-stuffs. Thus from the comparison of the changes of the quantity and efficiency of production in the various European and oversea countries, on the basis of data given in the "Annuaire Statistique International de la Société des Nations", it is seen, that the present agricultural crisis cannot be considered as a symptom of the permanent breaking of the laws directing the development of agricultural production, by the application of new machines and methods of cultivation in agricultural production in oversea countries, especially in North America. For although these improvements have helped doubtlessly in the expansion of agricultural production which took place before the crisis, this crisis was not connected with the increase of the efficiency of agricultural production for a unit of area. At the same time there occurred an intensive development of agricultural production in other countries but in spite of the introductions of machines and methods of production, which lowered the costs, — the expansion of agricultural production broke up in these countries

very strongly during the crisis, and as it would seem permanently, and as we see from the present limitation of cultivated areas, as a result of the destructive effect of erosion, this expansion was combined with the exhaustion of the land's resources. If however, we compare these changes to changes in the rate of growth of population, it is evident, that with the raising of economic systems to a higher level of development, there follows an increase of the efficiency of agricultural production and at the same time, the rate of the growth of population falls. This leads to the fact that countries with the greatest efficiency of agricultural production are distinguished most often by the lowest rate of growth of population. The development of these quantities in almost all countries, of different conditions is ressembling in the long run and this permits us to suppose that it is called forth by universal and permanent factors. If therefore, we take into consideration the world as a whole, in a longer period of time, then the activity of the tendency in the direction of a better and better providence of the population with food-stuffs is evident. These factors act however evolutionarily, they call forth gradual and minute changes in economic quantities, in particular units of time, and thus their activity may not be considered as the exclusive cause of a violent swerving of economic life from equilibrium, as during the crisis. The approach to the saturation point of the needs of humanity as concerns agricultural products, in particular grain, has however, certainly some influence in the facilitating of the arising and aggravation of disturbances of equilibrium between the agricultural supply and demand in a time of stronger changes in the amount of production.

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Stefan Werner: *Przemysł na Pomorzu i jego przyszłość. Poznańskie Prace Ekonomiczne, nr 22. (Industry in Pomerania and its Future 243+VIII pages). Poznań 1935.*

On the one hand the author was concerned with a methodological attempt at grasping the question of the industrializing of the given administrative and economic region, and on the other, with drawing attention to present conditions and

pointing out the need for the further development of industry in a territory, where Polish sea ports are situated. The author stresses the great importance of industrialization in the economic development of Poland, whose country side is overpopulated and whose borders are closed for emigration. Of especial importance is the development of industry in the Pomeranian territory, as well as in the new Polish port Gdynia, since experience shows that ports may, and even must, if they are to fulfill satisfactorily their economic role, be active centers of industry, not only of the branches directly serving the needs of the port and the fleet, but also of other branches of industry.

The author, after examining the natural conditions of the development of industry in Pomerania, reaches the following conclusions: that Pomerania, although one of smallest districts in Poland<sup>1</sup> both in territory (16.386 sq. km.) and in population (4.21% of the entire Polish population) and poor in raw materials, nevertheless possesses healthy conditions for the development of industry. In Pomerania there is an abundance of farm products, which permits the region not only to satisfy its own needs and provide for neighbouring areas, which have farm deficits, as for instance, Central Poland and even Eastern Poland, but also to export certain farm products abroad. The lack of energetic raw materials (oil and coal) and of minerals is compensated to a considerable degree by good communication, namely: the best developed railways and highways in the country, the navigable and regulated Vistula River, and above all, the proximity of the ports Gdynia and Gdańsk. The latter is a factor determining the export orientation of Pomeranian industry.

Pomeranian industry as a whole, comprised at the close of the year 1935, 14 main divisions and 30 specialized groups. Not counting the trades, industrial activity in Pomerania was developed in 1935 by 2138 industrial institutions, of which 138 gave work to more than 20 labourers. Socially the structure of Pomeranian industry is developing in the direction of the democracy of property holding; this is the more important,

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<sup>1</sup> In the spring of 1937, the area of the Pomeranian district was enlarged by the incorporation of 9 townships, thanks to which the area was increased to 25,000 sq. km. and the population to 1,900,000 persons.

since the period of the recent economic depression proved that smaller enterprises more easily and without external help adapt themselves to economic depressions, showing a greater elasticity in relation to the sales market. There were about 18.000 labourers in Pomeranian industry, in the period under discussion, of which 11.500 were employed in big industry. The value of production of the larger industrial institutions in Pomerania for the year 1934, amounted to 5,660.000 Ł, and the combined value of the production of industry for the whole region, about 10,000.000 Ł.

First of all, in Pomerania we have the food-stuffs industry (farm products) with 5—8% of the total number of enterprises and with a production value of the whole food industry of Pomerania of about 60—70% of the value of industrial production for the region. The most important division of the food industry in Pomerania is the manufacture of sugar, whose production value amounts to more than 151,0.000 Ł. The manufacture of sugar which begun in Pomerania in the year 1879, is represented by five large modern factories, of which one (in Chelmża) is one of the largest in all Europe. The basis of the development of this industry is the cultivation of sugar-beet, which stands on a high level, — the area of beet plantations here amounts to about 12.000 in contrast to about 100.000 in all Poland. The yearly consumption of beet in the sugar industry in Pomerania amounted even in the depression years to more than 3,000.000 q, and the sugar production to about 450.000q. Pomerania is the chief exporter of sugar from Poland to England, Holland, the Baltic and Scandinavian countries. Pomerania destines about 50—60% of its whole production for export. The Pomeranian sugar industry is organized together with that of Poznań in the form of a cartel which fulfills commercial, as well as professional, and economic functions. The Cartel possesses its own financing organ in the form of the Sugar Bank, cooperating with the British and French finacial market, but based on Polish capital. A dominating characteristic of the Pomeranian sugar industry, as for that matter of that industry in Western Poland, is its agricultural character, the s. c. combining of the ownership of industrial posts with ownership of beet plantations.



An important branch of farm products industry in Pomerania is distillery. The potato in Pomerania occupies from 13 to 15% of tillable soil, comprising, besides rye, a basic product of this biologically poor, but high from the point of view of cultivation, soil. The yearly harvest of potatoes in Pomerania amounts to 15,000.000 q and after supplying the needs of its own consumption, after the sowing and exporting of seed tubers, there remains a surplus amounting to about 1,500.000 q. More than 65% of this surplus is taken by the potato industry, and above all by the distilling industry, which produces in Pomerania from 50 to 80.000 hl. of spirits. Besides the distilling industry there exists in Pomerania a large potato — starch factory in Toruń, which belongs to the largest potato concern in Europe, the Polish Institute of Potato Products „Lubań-Wronka“; this starch factory produces at present about 25.000 q of starch to a great extend for export. There also exist in Pomerania a potato drying factory, although because of the fact that the price of fodder is very low in Poland and the import duties of foreign markets high, the production of this industry is not large.

The brewing industry possesses in Pomerania good natural conditions, thanks to the large harvests of barley of a high class. In Pomerania the production of beer amounts to about 50.000 hl. yearly, which comprises about only 18% of the possibilities of this industry for production. A cause of the serious crisis experienced by the Pomeranian brewing industry is the considerable fall in consumption of beer in this region together with the strong competition of large brewing concerns in other parts of the country — and for a short time — also the competition of Danzig breweries. Pomerania produces also malt of a good variety, partly for export.

In Pomerania, there exist altogether about 500 flour mills. The yearly amount of grain passing through those mills amounts to 360.000 tons and may be still increased by 30 to 40%. Pomeranian mills export a considerable amount of flour by water and complete the deficit grain supplies of other parts of Poland.

In recent years there has been developed most successfully in Pomerania, as in the rest of Poland, a meat-products

industry which produces bacon for export, as well as hams, lard and canned meat. This industry producing for foreign markets, was dependent in its development upon the commercial policies of the importing countries. In relation to England, it developed greatly before the Ottawa agreements, increasing its production to the value of more than 4,000.000 £ in Poland, and to 800.000 £ in Pomerania. As England reduced her import contingencies, the production of meat products began to decrease, oscillating in the neighbourhood of 2,000.000 £ yearly. Pomeranian factories produced about 20% of this sum. Recently, however, the Polish meat industry has begun to expand anew, acquiring new markets in place of the old ones, and increasing its export. This export is important for Poland from the point of view of the advantages which the small and middle-sized cattle farms derive from it. The meat industry in development embraces at present not only the export of bacon, but also of hams, canned meats, dairy products, fowl live and killed, and even game and wild fowl.

The metal industry is comparatively young, but is well developed in Pomerania, taking the form of factories for the manufacture of farm tools and machines and iron foundries. The farm machine factories engaged during the years of good trade about 1800 labourers, and now, after the period of heavy depression, their production and number of workers are again increasing. In the Pomeranian factories there are at present about 1000 workers employed, and production amounts to more than 10.000 tons. The electrotechnical industry and the new branches of the metal and machine industry are developing in recent years in Pomerania at a quick pace.

The chemical industry is represented by a factory of rubber products, which before the depression gave work to about 7.000 labourers, exporting its produce to many countries; lately the fat and oils industry has been successfully developed. The chemical industry, based mainly on raw materials imported from abroad, is usually located in close proximity to the sea ports. Four large oil factories located in Pomerania, produce more than 40% of the vegetable oils produced in all Poland. Among other concerns belonging to the chemical industry, the author enumerates a factory of oils and artificial fertilizers,

a factory of paints and lacquers, a tar distillery, pharmaceutical factories and roof paper mills, besides soap factories. The total value of the yearly production of the chemical industry in Pomerania is assessed by the author at more than 1,150.000 £, while the number of labourers engaged, is more than 2.500.

The animated economic development of Pomerania in the last 15-year period has been a cause of the increase of the mineral production and of the development of the building industry there. The mineral industry in Pomerania is represented chiefly by brick yards, engaging about 2000 labourers; the value of its yearly production amounts to more than 300.000 £. The Pomeranian brick industry possesses its own raw-material, in the form of diluvial clay; coal alone is transported from south-western Poland. The building industry in Pomerania gives work to about 2.500 labourers. Large investment undertakings (the building of the port, the development of towns, industrialization) made in Pomerania after the return of that district to Poland, have created for this industry permanent good conditions.

In Pomerania, forests occupy about 370.000 ha, or in other words one fourth of the area of the district; hence the possibilities of the development of the wood industry. This development has already reached its peak, and we might rather speak of the over-investment of the saw-mill industry in Pomerania, than of its lack. Pomeranian saw-mills take care of about 300.000 cub. m. of raw material yearly. Besides the saw-mills industry the furniture-making industry is well developed in Pomerania giving work to 1000 labourers. A new industry is the basket weaving industry, located in the lower course of the Vistula, and possessing several foreign markets already. The chief customers of the Polish wood industry are England and Germany.

The author discusses several less important fields of production there, as for instance tanneries, clothing industry, polygraphic industry, paper factories, and hotel and tourist trade, after which he passes to a synthetic conception of the perspectives of development of Pomeranian industry with special consideration of the problem of the industrialization of Gdynia, as the chief Polish port. The author is against the maintaining

of those industrial posts, which have lost their natural conditions of existence, and advocates the further development of those posts which were able to live through the period of crisis without any too significant decrease in their financial means (foundries, saw-mills, flour-mills, sugar refinery, distillery). He suggests that first of all the possibilities of efficiency of existing posts should be realized, and only later considered the founding of new ones. The author enumerates divisions of industry, which in Pomerania possess even at present wide perspectives for development, assuring a certain profitability of invested capital; above all the chemical and electrotechnical industry, as well as certain special divisions of the food-stuffs industry, such as the refining of lard, the sorting of eggs, the fattening of fowl, the canning of meats. It is necessary to assure these new industrial posts possibilities for locating a part at least of their production in foreign markets, which in the field of food-products is necessary in connection with the surplus of agricultural and cattle raising articles in Poland.

Separately, the author treats the problem of the industrialization of Gdynia, which at present possesses only the following enterprises: a shipyard in process of rebuilding and enlargement, an oil factory, a large export rice-shelling factory and a stockyard. The author takes the standpoint that the development of industry in the port of Gdynia must proceed gradually. In the first place it is necessary to complete the apparatus of commercial and credit mediation and develop the produce trade (sorting houses, packing houses, produce firms etc.). Next follows the development of the auxiliary port industry (production of packing materials, saw mills etc.), and lastly, the gradual founding of industrial firms *sensu stricto*, as: tanneries for imported skins, metallurgical factories etc. The development of ship building may in time demand the building of great furnaces in Gdynia, just as the growing export of food articles is already creating favourable conditions for certain factories in the port, as for instance the export stock yards and the manufacture of canned goods. The support of the development of the fish industry in Gdynia and on the whole Polish sea coast should be continued. This industry has already reached a considerable degree of develop-



ment of Polish deep sea fishing, it will find constantly more favourable conditions.

In making a long run programme, it is necessary to designate for Gdynia not only the role of an industrialized port, but also an industrialized metropolis for the whole of North-West Poland. The development of Gdynia in this direction must however take place gradually, as a strong and healthy basis for industry is developed on the Polish coast. The development of Gdynia up to the present, permits the assumption, Gdynia will fulfill satisfactorily the economic role marked out for it.

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Edgar Bark: *Zagadnienie szybkości obiegu pieniądza we współczesnej ekonomice. Poznańskie Prace Ekonomiczne, nr 21. (The Problem of the Velocity of Circulation of Money in Modern Economics). Poznań 1935, 142 pp.*

The purpose of the present paper is to present the modern literature on the velocity of circulation of money in relation to its most basic and typical representatives.

The point of departure for considerations on the velocity of circulation is the quantitative theory of money, according to which the purchasing power of money is dependent upon the quantitative relation between the stream of money and the stream of goods, meeting in the market in a certain, defined unit of time. The factors exercising an influence on the level of prices may only realize this influence when they evoke a change in the quantitative relation between the stream of money and the stream of goods. In what manner may the stream of money be changed? This may obviously occur when the amount of money is increased. Nevertheless there may take place changes in the size of the money stream which do not accompany the change in the amount of money. These changes occur as a result in the changes of the velocity of its circulation.

The problem of the velocity of circulation of money had been fairly early known in monetary literature (W. Petty, J. Locke, R. Cantillon), but up to about the last half of the XIX c. investigations on this problem did not go any farther.

Not until J. S. Mill did the discussion of the problem change its direction. In K. Wicksell, we meet with the first, more extensive treatment of the problem which interests us. According to Wicksell, money is a dual quantity, composed on the one side of the amount of money, and on the other of the velocity of its circulation. The velocity of circulation of money, Wicksell defines, as the number of times which money passes from hand to hand in an accepted unit of time by buying and selling. Besides the velocity of circulation, Wicksell considers as an equally important moment, the time when money is at rest, which forms the limit of the velocity of circulation. The whole argument on the theory of the value of money, in the opinion of Wicksell, leads to the question whether the velocity of circulation possesses an independent meaning for the purchasing power of money, or only a symptomatic meaning, since the statement that the amount of money multiplied by the velocity of its circulation is always equal to the value of the goods sold in an accepted unit of time, is not a theory but an axiom. Wicksell takes the standpoint that the factor of the velocity of circulation of money is independent.

Besides Wicksell, J. Fisher has devoted much attention to the problem of the velocity of circulation of money. He defines the velocity of circulation as the relation of the money paid out, to the average amount of money on hand, i. e., as the rate of turn-over. In his opinion, the velocity of circulation of money, leaving out of consideration transitional periods, is in the exchange equation a passive quantity and at the same time independent of other elements of the equation. The velocity of circulation of money is decided by internal factors, i. e. those lying outside of the exchange equation. These factors are taken by Fisher in three groups: a) habits of the individual, b) systems of payment customary in the society, and c) general factors.

The theory of the velocity of circulation of money offered by Wicksell and Fisher include in short all the chief postulates upon which modern theories are based.

The problem of the velocity of money circulation did not meet with proper understanding until the post-war monetary literature. There appear the first attempts at classifying the

theories encountered. The most happy seems to be the classification of N. W. Holtrop, who differentiates: 1) Theories of the movement of money and theories of money supplies, and 2) Monetary and amonetary theories. Of importance is only the antinomy between monetary and amonetary theories. Monetary theories attempt to connect the velocity of money circulation with the time of the circulation of goods (with the speed of the economic process). J. Marschak proposes the conducting of the controversy between these theories to the question whether there exists a connection between the relation of the money turn-over to the amount of money (velocity of money circulation), and the relation of the social wealth to the social produce (the average time that the production lasts). Amonetary theories answer the question more or less distinctly: yes. Monetary theories answer in the negative.

Among the modern monetary theories of the velocity of money circulation the first place is occupied beyond question by Holtrop's theory. His definition of the velocity of money circulation is similar to that of Fisher. Changes in the velocity of money circulation, which are connected with a differentiation of the production process do not influence, in Holtrop's opinion, the level of prices. Therefore he differentiates besides the velocity of circulation, the conception of the effectiveness of money, as the factor, in which are expressed only those changes in the size of the stream of money, which are not conditioned by a change in the coefficient of the differentiation of the production process, or by a change in the amount of money. The effectiveness of money is defined by Holtrop as the relation between the income expressed in money and the amount of money.

Changes in the size of the stream of money are combined always with changes in the amount of money on hand of the production and consumption economies. An investigation of the problem of money supply is necessary for the designation of the velocity of circulation. The velocity of circulation of money at a given level of prices and in a given production of goods is reversely proportional to the entire amount of money in circulation, for the latter is the sum of the money surpluses of all economies. The factors which designate the

size of these money surpluses thus, designate at the same time the amount of velocity of circulation also. The essence of the problem of the velocity of money circulation lies in the causes defining the size of the money surpluses.

Factors designating the quantity of money surpluses are, on the one hand, oscillations of the general sum of credits, expressed in a variable need of financial means, and on the other hand a combination of all those factors which facilitate the application of means to these oscillations, as for instance, the use of short term credit, the possibility of making use of money surpluses in one's own enterprise, and the like. The amount of the velocity of money circulation designated by the intensity of the use of money capital may undergo change only if this intensity is changed.

The absolute rate of the velocity of circulation is in Holtrop's opinion, without meaning for the social economy, which is in a state of static equilibrium. Only in dynamics the absolute rate of velocity of circulation, or the effectiveness of money, takes on a special meaning. It is decisive of the influence which a possible stretching or shrinking of money circulation exercises on the level of prices. In investigating the regular changes of the effectiveness of money, Holtrop expresses the supposition, that the effectiveness of money is at present smaller than in former times. For in spite of the fact that the fluctuations of credits in relation to the general sum of credits were in former times stronger than at present, nevertheless in relation to the general income, money capital was then so considerably smaller than at present, that even the inactivity of a considerable portion of it, might accompany an advantageous relation between the general income and the general sum of inactive money capital, i. e. the general amount of money.

The development of credit with the course of years formed a balance for the inadventagous influence of the growing meaning of the oscillations of the general sum of credits. Especially strong did it appear in the period of the development of deposit banks. These were an instrument for the increasing of the effectiveness of money to the highest, technically possible limits. However, as a result of the development of check



turn-over, thanks to which banknotes received the same character as money, the bank became an institution, creating money. This transition possesses for the effectiveness of money a basic meaning. From the time when the deposit bank must be regarded as an institution creating money, the effectiveness of money has rather diminished than increased.

In Neisser's opinion the velocity of money circulation in the sphere of production is designated by the average length of the income period, by the average technical duration of the economic turn-over and by the capital intensity of the social economy. This principle undergoes changes thanks to the appearance of temporary money surpluses as a result of an unequal sales and purchases, and as a result of a transitional massing of financial means for the purpose of their later investment, if these supplies are not eliminated by the credit mechanism. In this manner the designated average velocity of money circulation in the production sphere undergoes modification, if we wish to apply the result to the amount of money, in which are further included reserves for unforeseen expenses, money supplies of financial circulation and money supplies of the public wealth.

Keynes differentiates three spheres of money activity: the sphere of income, the commercial sphere and the sphere of savings. The velocity of money circulation in the two first spheres depends upon the relation between the size of turn-over in each of these spheres and the average amount of money supplies contained in them. In the third sphere, that of savings, the velocity of money circulation is of necessity equal to zero. In the opinion of Keynes, the individual regulating the size of his money supply, justifies this, on the one hand by reason of ease in the conducting of his business, and on the other, by reason of the sacrifice, which the withholding of a certain quota presents to him. Thus, the velocity of money circulation depends on the relation of the advantages gained, to the sacrifices made.

In opposition to the monetary theories of the velocity of money circulation, amonetary theories see in it a phenomenon which is closely connected with the processes occurring in the world of goods. We may roughly divide them into three

groups: 1) theories which consider the velocity of money circulation corresponding to the velocity of the turn-over of goods, 2) theories on the mercantilistic thesis of "more money in circulation means more trade", 3) theories stating that money circulation is designated by the turn-over of goods. Scientific significance is possessed only by the last group. J. Schumpeter and J. Budge belong to that group.

The function of money in social economy is in the opinion of Schumpeter only of a technical nature. The forms and movements of money are adapted to economic processes. The velocity of money circulation is designated by the tempo of the process of production, nevertheless it does not have anything in common with the velocity of the turn-over of merchandise. The amount of merchandise cannot ever be changed by a quicker or slower circulation of any element of the productive power whatever: if it attains its results earlier, it ceases to exist.

One and the same money unit circulates many times in an economic period, from the sphere of consumption to the sphere of consumption again, that is, it becomes a frequent element of money income. From this we see what is theoretically the rightful measure of the velocity of money circulation. It is the number of times which a money unit becomes an element of income in the social period of production.

The basic problem is, in the opinion of Budge the question whether in reality the velocity of money circulation is a quantity independent of all other quantities in the exchange equation. He expresses the conviction, that the velocity of money circulation cannot be considered as an independent factor influencing the face of the price level. Any movements on the part of merchandise must always correspond to the changed velocity of money circulation. For money possesses a character exclusively supplementary; money does not designate the turn-over of merchandise, but merchandise designates the money circulation.

Jacob Marschak has undertaken an attempt at the synthesis of monetary and amonetary theories on the velocity of money circulation. Marschak wishes to answer the question whether any, and if so, what connection exists between the velocity of money circulation and the average duration of

production. The point of departure of his considerations are the causes fixed by Holtrop, designating the size of money supplies. The size of money supplies is designated by the difference between the maximum and minimum of the concrete credits of the enterprise. If this difference is expressed in percentage in relation to the average size of concrete credits, we get at the same time the percentual relation of the maximally necessary amount of money to the average size of the concrete credits of the enterprise. Likewise, the relation of the difference between the maximum and minimum supplies of goods of the social economy to the average supply, will also designate the relation of the amount of money to that average supply of goods. In this way, with a given amount of the yearly social production, the general sum of the social wealth is not nevertheless without significance for the designation of the amount of money necessary, and together with the social wealth also the average duration of production. With the help of corresponding charts, representing the structure of the social wealth, Marschak shows, that the division of factors, distinguishing financial needs as monetary or amonetary, is impossible. That which in reality occurs, is the dependence of the velocity of money circulation, as well as the velocity of the turn-over of wealth, upon the shape of the social wealth figure. However, this relation is very different in either amount. The difference between the general and maximum figure of the wealth designates the money need and through this with a given social income and a given differential coefficient, likewise also the velocity of money circulation. The surface of the figure of wealth itself expresses the amount of wealth, and in this way, with a given real income, the average duration of production. Amonetary theories are in error, when they state that there exists a direct dependence of each of these quantities on the other. If, on the other hand, they deny the existence of any connection whatever between them, they forget that there occurs here a designation of two phenomena by a third.

E. Taylor and L. Bortkiewicz were also interested in the problem of the velocity of money circulation. According to Taylor, especially Polish inflation, considering for its colossal

size, formed a splendid field for the observation of certain phenomena connected with changes in the value of money, which under normal conditions generally remain in the shade. The chief characteristic of the Polish inflation was the lack of proportion between the growth of the general price level and the growth of the amount of money, which arose as a result of changes in the velocity of money circulation. Two kinds of inter-dependencies exist between the amount of money, the velocity of its circulation and the price level; either the amount of money reacts directly upon the price level, which action is intensified by anticipation, and the price level exercises an influence partly on the velocity of money circulation, adapting it to its own conditions, and partly bears pressure on the acceleration of the pace of the increase of the amount of money. Or again, the increase of the amount of money influences first the increase in the velocity of circulation, and both these amounts together, react on the price level, bringing about a disproportion of its movement in relation to the amount of money. Taylor is of the opinion that the last type of relationship is normal, while the first may arise only at an advanced stage of the height of the price level. The dependency between the amount of money and the velocity of its circulation is not however an exact one, since the velocity of circulation depends likewise upon causes lying outside of the amount of money, which Taylor divides into two groups: 1) external material conditions of circulation (laws, technical furnishings, development of credit, and the like), 2) psychic conditions of circulation, decided by race, social surroundings.

Bortkiewicz attacks the view according to which the disproportion of the increase of the general price level to the increase in the amount of money during the period of inflation, is called forth by an increase in the velocity of money circulation. To use the conception of the velocity of money circulation from the point of view of the individual as a consumer, without taking into consideration the producer, is, in his opinion, impossible. The paying out of massed money reserves of consumption economies cannot exercise a more permanent influence on the price level, since these reserves are quickly used up. Money, which the consumer in this way



spends more quickly, remains correspondingly longer with the producer. Bortkiewicz nevertheless does not deny the fact, that during inflation the velocity of money circulation increases. He only conceives differently the causal connection which has place here. In his opinion, lack of confidence in money influences directly the price level and thus directly increases the influence of the greater amount of money. This calls forth a disproportionate rise in the price level in relation to the amount of money, as a result of which there arises a lack of money, which we attempt to avoid by a corresponding change in paying habits, thus increasing the velocity of the circulation of money.

A. W. Marget discusses at length the conception of the velocity of turn-over of goods. He defines goods, which are included in the exchange equation and to which the conception of the velocity of turn-over refers, as "goods destined for sale", and the velocity of the turn-over of goods he expresses by the relation of the volume of the merchandise turn-over to the volume of goods destined for sale. In his opinion the velocity of the turn-over of goods may be considered as an amount composed of two factors: 1) the velocity with which the goods ready for sale pass to market transactions, and 2) the number of middle-men through whose hands the goods pass during sale. Marget shows the necessity for an exact differentiation between two factors influencing the supply of goods: the factor which arises from market habits (velocity of turn-over as Marget understands it) and the factor which lies in the field of production (the process of production in its exact sense, that is, without trade), which has nothing in common with the velocity of the turn-over of goods.

Two questions require special consideration. The first is the conception introduced by Holtrop into the theory of money of the "effectiveness of money". It seems doubtful that the velocity of circulation and effectiveness of money can change in opposite directions (as Holtrop maintains), and thus the whole conception of the effectiveness of money loses its value. Also doubtless appears the view of Holtrop that the effectiveness of money in former times was greater than to-day. In general, the introduction of the conception of the effectiveness

of money to considerations on the velocity of circulation awakens reservations and everything speaks for the eliminating of this conception in our work.

The second question is the introduction by Marget of the conception of the velocity of turn-over of goods to the exchange equation. He treats goods in the same manner as money. Such a postulate does not, however seem justified. It is impossible to close our eyes to the basic difference between money and goods. Money is a strictly circulating good, which does not satisfy any need and exists only in order to pass from hand to hand, mediating in exchange. On the other hand, goods do not circulate for the sake of circulation. They only cover a certain road, defined by the organization of the process of production, from the producer to the consumer and cease to exist with the act of consumption. The view according to which only goods actually exchangeable are included in the exchange equation seems more justified. This view eliminates in consequence the conception of the velocity of the turn-over of goods. It is hard to find any advantage which the introduction of the factor of the turn-over of goods into the exchange equation, in the form proposed by Marget, would have for the theory of money. On the other hand, the difficulties, which it creates, are obvious.

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Izak Bezner, *Dyspersja cen w Polsce (1927—1932)*, Kraków 1935. Nakładem Polskiej Akademji Umiejętności, 32 str. (*The Dispersion of Prices in Poland [1927—1932]*, Kraków, published by the Polish Academy of Sciences and Letters, 32 pp).

At the basis of the work lies the proposition that for a knowledge of economic processes it is not enough to examine the changes in the general level of prices, but rather the differences arising in the movement of particular prices are decisive. These differences are decisive in the changes in production and exchange of these goods. A large dispersion of prices therefore is evidence undoubtedly of a disturbing of the equilibrium of the economic system. As a measure of dispersion the author accepts the logarithmic mean deviations and at the same time examines them by the method of the link relatives as well as

at their constant basis. Statistical examination embraces 77 kinds of prices of both, agricultural and factory goods. The dispersion of prices was calculated each quarter. The calculated mean deviations of prices by the chain method (in relation to the previous period) oscillates within narrow limits and does not show any regularity. The measures of the dispersions of prices calculated in relation to the year  $1927 = 100$  show a constant increase. Closer analysis of the movements of particular prices points to the fact that the changes of prices in the period under examination were not equal. In the first years the most numerous group of prices underwent no changes, in the succeeding period the frequency curve shows two maxima and beside strongly changing prices there is a strongly marked class of prices undergoing no changes.

Next the author examines separately the dispersion of non-elastic and elastic prices (cartel and monopolistic) holding that the changes of these prices can by no means be considered as a proof of good business. The dispersion of non-elastic prices is comparatively insignificant and does not increase until the year 1932, and then only thanks to governmental action aiming at the lowering of these prices. The dispersion of elastic prices is therefore the stronger.

Later the author examines the dispersion of agricultural and industrial prices. The changes of agricultural prices are considerably stronger in the given period and in view of the great significance of agriculture in Poland decisively influence the dispersion of elastic prices. The small dispersion of industrial prices is partly the result of cartelizing of industry and partly the result of the dependance of industry on raw materials from abroad.

In the latter part of the paper the author proceeds to calculate the coefficient of the deviation from economic equilibrium. Granting that the trend signifies the successive positions of equilibrium, we may state that the dispersion of the trend of prices is normal, that is, a disturbance of the equilibrium. As a measure of the deviation from the equilibrium the author accepts the relation of the dispersion of concrete prices to the dispersion of the trends.

The period examined embraces only six years, and gives

no foundation for a correct enumeration of the trends of prices; the difficulty arising thence is solved by the author who accepts as a trend for concrete prices the points given by the prices of a broader group of merchandise to which the given good belongs. The group indices of prices are characterised by a much smaller dispersion of prices and are therefore suitably adjusted.

The following outline illustrates the oscillations of the calculated coefficient of deviation from economic equilibrium.

The amplitude of oscillations decreases from year to year, bearing witness to the fact, according to the author, that economic life is being stabilized on a new level of equilibrium.

The author works particularly in the calculation of the coefficient of deviation from the equilibrium along the lines of the position taken by dr O. Lange<sup>1</sup>.

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<sup>1</sup> Compare O. Lange, Kraków 1932, whose summary appeared in the first number of Economic Studies. See also O. Lange: *Die Preisdispersion als Mittel zur statistischen Messung wirtschaftlicher Gleichgewichtsstörungen*. Veröffentlichungen der Frankfurter Gesellschaft für Konjunkturforschung. Nr 7, Heft 4, Leipzig 1932.





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